



## Original Correspondence.

## TECHNICAL EDUCATION.

SIR.—To say that the all-important question of Education is in the ascendant may appear a trite remark, but to those who have long watched, and done their best through many discouragements to give it prominence, it may be permitted. To such it is but natural to look back, and to measure the elevation the question has attained, to glance at its history, at the circuitous course it has travelled, and to regard the achievement as a fitting reward for long years of patient labour. Poets, theologians, and statesmen have never failed to regard it as an agency specially designed by Providence for the improvement and elevation of mankind, yet it never before stood forward so pregnant with meaning as at present, nor was it ever aided towards its accomplishment by influences such as now surround it. Nor is it the advocates of improved systems of primary instruction only who have good reason to congratulate themselves; those also who have hitherto lamented the lack of suitable preparatory education for such of our youth as are destined to take part in the industrial pursuits of the country have no less grounds for encouragement, when taking into account the present state of the question. It is with the latter phase more particularly—that is, with the efforts now being made to establish some practical system of instruction, which shall have a tendency to develop the faculties of the young for the fulfilment of those special duties and pursuits to which they might be directed, that we now propose to deal.

The changes wrought by science and civilisation render just now some such training essential for fitting the rising generation for the several spheres of useful labour in which, in all probability, they will be employed in after life. The perfection to which human industry has been brought in this country, and the admitted superior enlightenment of our rivals on the Continent, not only render it imperative that we provide a wider and sounder basis of general instruction, but also that we lose no time in building upon it such special culture as will fit the child for that line of life which he might choose, or which his parents and friends might choose for him. With regard to primary education and general culture, there can be no doubt but that much more might be done, even in the same space of time, by improved educational methods or machinery. Indeed, the conference of school-teachers, held a week or two ago, at the rooms of the Social Science Association, London, brought out the important fact "that by well-organised methods of teaching, by fuller classes, and by divisions of educational labour amongst graduations of skilled teachers and pupil teachers, elementary education may be given in from one-third to one-half less time, together with physical training, at one-third less expense than can be given to children in small numbers, and with small classes under single teachers;" also "that by the improved methods of school-teaching, which have been in operation many years, advanced elementary instruction, such as is commonly considered to require school attendance up to the 13th and 14th year, and does require it in small schools, under single teachers, may be imparted satisfactorily before the end of the 11th year. This is most important discovery, and is a great step gained; let this be accomplished, let but a good foundation be laid by general training in a third less time than at present, and let boys destined to go out into this work-day world to engage in its busy pursuits have their attention turned in that direction, and their minds stored with such information as will enable them, with the greatest economy of effort, to carry out their designs, and we shall at once raise the character of the artisan and of his productions.

In pursuits and professions, in which by common consent it has been admitted great strain is put upon the mental powers, our ancestors wisely adopted the system of giving special instruction; and in the professions of law and medicine, in the pursuits of architecture and engineering, a preparatory education for special subjects was considered indispensable; and such is now the competition, and such the need for improved and economical methods of working in all branches of trade, that something of the kind has become absolutely necessary in all departments where any kind of labour at all above that merely mechanical is in demand, if the labour itself is to be at all agreeable and profitable to the men, or of advantage to the public. The state of our mining population in point of education has long been a disgrace, and a constant source of danger. We have not only an uneducated population in the mines, but the educated portion, the foremen and bailiffs under whose direction they prosecute their tasks, is exceedingly small. The consequences are undoubtedly and irremediable loss to the country of much of that rich mineral treasure which has placed it at the head of the commercial nations of the world, those fearful sacrifices of useful lives which so often occur, and those losses to the community which so frequently happen from misunderstandings and strikes, which latter one can scarcely imagine to take place, or at any rate not to the same extent as at present, with a better educated class of workmen. Whatever may be the precautions taken, or however strict the rules adopted by Parliament, proprietors, or inspectors, as long as the miner continues the same listless and unenlightened piece of animated machinery he often is at present, he will continue to set such regulations at defiance, although he and his family may be the first to suffer. In those deep large mines, considered to be the most dangerous in the kingdom, from the large quantities of ignitable gas given off, where it is absolutely necessary to employ the best talent at command, in order to prevent even a more frequent occurrence of those calamities which every now and then send a thrill of horror through the nation, and create great losses to the proprietors, complaints are frequent of the stolid indifference of the men, of the difficulty of getting them to adopt precautionary measures, and of enforcing a discipline necessary for the safety of life and property. These men are sent into the mine when boys without any training for their work, there is no apprenticeship or preparatory instruction for the task they have to perform when they become men; the consequence is they rarely rise above the level of mere machines, and they readily become the dupes of those knowing a little more than themselves, who may find it to their interest to flatter and make tools of them. It is not so in other countries, inferior in many ways to our own.

The readers of the *Mining Journal* may remember a description in the report by Mr. Warington Smyth, M.A., of the Apparatus and Processes of the Art of Metallurgy, in connection with the Paris Exhibition, which appeared in the *Journal* of October 12. He says—"As far as I have had the opportunity of forming an opinion, the working colliers are generally inferior to ours in working energy, but superior in steadiness; and a great part of the credit for the present active and intelligent conduct of the French coal trade is due to the excellent technical training received by the superior officers and managers at the school at Paris." And there is no question but that any amount of assistance which proprietors of mines might be called upon to give to Government in carrying out an efficient scheme of special instruction would be paid back to them by that true economy in the working of mines which is now sometimes sought to be effected by more questionable means. On the Continent the proprietors of mines evidently find it so, as shown by the reports of those who, taking deep interest in the subject, visited and made careful inspection of foreign works similar to those in England. One of the more talented of these gentlemen (Mr. Samuelson, M.P.), speaking of Westphalia, where mining is carried on with, probably, more success than in any other district on the Continent, says—"What they do there is this: if a man working underground has shown superior aptitude they take him out of the pit and send him to school for two years. They teach him surveying, the elements of mathematics, the chemistry of the substances with which he has to deal, and they fit him in every respect not only to direct, but also to be an example to the miners out of whose ranks he has been taken. These men form a link between the workmen and the technical engineer, a link which with us is entirely wanting, because our foremen are entirely uninstructed." With such knowledge of the advantages placed in the hands of the miner in foreign countries, with a knowledge, too, that such advantages have led to such an advancement in mining and metallurgy, that our rivals whose success we had underrated are found to be fully abreast of, and in some respects greatly in advance of us, we shall be highly culpable if we do not hasten to apply the best remedy the case requires.

The School of Mines, Jermyn-street, is a capital institution, so far

as it goes, but how few receive any benefit from it. What is wanted is an institution, similar to that of Jermyn-street, in the centre of every mining district in the kingdom. The School of Mines in Jermyn-street is a modern institution. Germany, on the contrary, has a Mining College at Freiberg, which, but for the war last summer, would have celebrated with great *éclat* its hundredth anniversary; and the library, mineral collections, models, and apparatus of which have been valued at 20,000*£*. A work has been published in commemoration of this anniversary, containing articles by some of the professors and students, one of which, by Dr. Scheerer, Councillor of Mines, on "Mining Studies," shows the effects the school has had upon mining generally; also the influence which the study of mining, as pursued at Freiberg, has upon a man's moral, social, and political character. In the list of names of Englishmen who studied there occurs James Watt, of Birmingham. Suppose such a college to have existed in the centre of the mining district of South Staffordshire, either for the same length of time or for half that period, can anyone imagine possible a defective state of mining, resulting in waste of property and loss of life, such as that complained of by Dr. Percy, W. W. Smyth, M.A., J. Beete Jukes, Esq., and others? Yet what more easy than the establishment of such colleges; there is wealth enough, even looking at the matter as one of local enterprise, and a museum attached would soon become stored by contributions from the neighbourhood, and duplicates which might be spared from Jermyn-street. Copies of maps and apparatus might also be stored there, and lectures might be given on mining instead of in London, where few feel an interest in them, and scarcely anyone goes to hear. The institutions for technical instruction in Germany are State institutions, and we see no reason why they should not be here, but aided at the same time by local efforts.

J. RANDALL, F.G.S.

## TECHNICAL EDUCATION IN WALES.

SIR.—An able and eloquent address has been delivered at the Temperance Hall, Merthyr Tydfil, by Mr. Buckmaster, F.C.S., on Art and Industrial Education, and the facilities afforded by the South Kensington Museum for its promotion. Mr. Buckmaster proceeded to show how the study of art and science by the operative and mechanic tended to strengthen and beautify the mind, and that theory added to practice led to many useful and interesting discoveries—this part of the lecture he very vividly illustrated by diagrams, fully explaining how theory led the mechanist to more fully comprehend the object, or "the why and wherefore," of what he does; and as evidence that his calling rested on certain bases and conditions, he related many amusing and ludicrous anecdotes. He had at various times enquired of skilled workmen for the reason of certain processes producing certain results, but the only reason these untheoretical workmen could assign was that it was so, and that it must be so, comprehending no physical law to account for the conditions. The lecture was evidently simplified to suit the meanest capacity, for Mr. Buckmaster made it so lucid and free from technicalities that any unlettered mechanic or operative must have felt the full force of the remarks, and that they were intended to benefit him. The sum and substance of the lecture was this—that the more scientific education of working men would help them forward in all ways; it would give them a better insight into the processes of the various trades and callings, would enable them to further economise their labour, and to invent new and improved systems. The skilled workman, he said, is he who brings the greatest amount of science, however acquired, to the business of his calling, for it is not mere strength that assists the man, but skill, which is real practical science. Only get the workman to become a man of thought, and many fresh developments will present themselves to his mind as food for contemplation, so as eventually to lead him to become a benefactor of his species. It is not mere literary culture that is so much needed, but habits of reflection; and thoughtfulness and method in doing things even the most simple in accordance with the laws of nature. Many of the most eminent and distinguished of scientific men have sprung from the ranks of the poor and laborious—it is diligent purpose mainly that is required to make art and science popular and applicable to all conditions of men. The lecturer observed, in explaining the conditions upon which instruction was aided by the department to be represented, that not one of the continental Governments devoted anything approximately to the sums voted by our Government towards educating the workpeople and their children in both elementary and technical knowledge, yet, notwithstanding this great advantage, the continental nations had advanced far beyond us in these important matters. A cordial vote of thanks, moved by the Rector of Merthyr, and carried by acclamation, was given to Mr. Buckmaster for his interesting lecture, and a committee was at once appointed in order to form classes in accordance with the Government rules.

It was announced that the chair would be taken by Mr. G. T. Clark, but a that gentleman is high sheriff this year, and consequently had to attend the County Assizes, he was unavoidably absent. I had hoped, seeing his name connected with the meeting, that our ironmasters were going to establish schools in connection with their works, and based on technical teaching, but in this conjecture I have unfortunately been mistaken, for it appears that it was in consequence of questions put to Mr. Bruce and Mr. Henry Richards touching this matter that the tradespeople of Merthyr were induced to solicit the attendance of Mr. Buckmaster at this place. I attempted to read to the meeting a short paper written by myself on the loss attending the appointment of incompetent ironworkers to highly responsible positions in connection with the iron manufacture, without even being able to comprehend the importance of the same in either a technical or practical sense; but here again I was unfortunate in my conjecture, for the majority of the audience consisted of those who had neither taste nor sympathy for my remarks; this, however, is quite in accordance with the usual method of treating working men in Wales—there is so much class distinction and prejudice that the chance of any real working man, however enlightened, being heard upon the subject I have treated upon is but very small indeed. This acts as one of the principal drawbacks to the working man, and is the reason why he keeps so aloof from those objects which the Government of his country are so desirous that he should acquire.

In order to make Art education of some value in that district, the masters must lead the way at once establishing these schools in connection with their works, for it is quite evident that if we wish to compete with the continental nations our workpeople must be raised to the same standard in practical knowledge and in elementary training appertaining to other matters. Brute force has been weighed in the balance, and found wanting. In South Wales I should fancy that the mere fact of France, Belgium, and Germany extending their trade in steel and iron nearly 400 per cent. during the last ten years must have some influence upon the actions and decisions of our employers in this district; but how they think to obtain the requisite standard of intelligence from the workpeople whilst there is a continuance of the old system of things is a question far beyond my humble comprehension—ever the agriculturist is ahead of the ironworker, for farmers find it to their interest to grant prizes and premiums for both competent ploughmen and for the terms of servitude of their workpeople. *Penydarren, Merthyr, March 16.*

BENJAMIN ROGERS.

## COLLIERY WORKING IN SCOTLAND.

SIR.—Your truth-loving Correspondent of Scotland has stated, in a form that cannot be misunderstood, that I had advised certain parties in Fife to go to America. The statement is a pure fiction from that not very fertile brain of your Correspondent. He ventures to ask me in last week's *Journal* what I think men should get if the coal be selling at 3s. 2d. per ton? My answer to what I have no doubt your lively Correspondent deems a perfect poser, is as much as ever they can obtain by an honest and upright combination. But on no account to have recourse to such mean, low dodos as trying to truck the "poundage" as they do the men. To resort to no such mean, low acts as "poundage," that was also mentioned in last week's *Journal* by "One that Knows" only a little. To get as much as ever they can; but not on any account to blow their employers into eternity by explosions that they may gain a large wage, though the employers do so arrange things that they not unfrequently blow their men into another existence in the pursuit of large profits. I will not advise the men either to rob their employers by using false weights, or no weights at all, in order that they may get a larger sum for their work, though the employers often do so to the workmen that they may increase their profits. As you gave the misstatement of your Correspondent a place, and the question above answered a place, I trust you will likewise do me the justice of giving this a place in reply.—*London, March 16.*

ALEXANDER McDONALD,  
President, Miners' National Association.

## TREATMENT OF POOR COPPER ORES.

SIR.—This very important subject has been during two successive weeks brought prominently forward in the *Mining Journal*. The week before last, in an obscure and very indistinct manner, a notice of Mr. Henderson's pretensions, or claims, and in last week's *Journal*, in the very able letter signed "Poor Copper Ores." The immense importance of this subject at the present time to Cornwall, Ireland, and our home mines, producing nothing but poor copper ores, cannot be overestimated, and its importance also to the alkali trade, who are now large purchasers of poor copper ores, must be my apology for trespassing upon your valuable space. Within the last seven or eight years I have given much attention to the economical treatment of poor copper ores, and have made myself acquainted, theoretically and practically, with all the different processes proposed for extracting the copper contained in the burnt ores produced so very extensively in our manufacture, and I may say I am well acquainted with all their merits, or I should rather say their demerits. I cannot say that I entirely agree with "Poor Copper Ores" in all he says of Mr. Henderson's process. His facts are wrong when he asserts that the muffle or close furnaces and condensers have been abandoned by his licencees, for I know for a fact that in a new works in course of erection near me both of

these are retained. I mention this, Sir, not to show that I differ from "Poor Copper Ores," but to impress upon him that in a legal and technical struggle, such as is evidently approaching, practical and scientific men should not be carried away by a vein of detraction from the realms of pure facts; and from "Poor Copper Ores" letter I am satisfied that such was not his intention. But it is absolutely necessary in Law as well as in Science that no assumptions be permitted. Your correspondent would, therefore, render a great service to the cause in which he has declared himself a volunteer, and which he has undertaken from a sense of duty to the public, if he would state how, when, where, and under what circumstances he assisted more than 20 years ago in working out, on a commercially successful scale, the complete separation of copper from the burnt ores, which are produced so largely in my trade. To satisfy everyone, it would be well for him also to state the reasons that combined, or the circumstances not under control, which have apparently operated to extinguish this process. For the purposes of those who have had "the courage" to challenge Mr. Henderson's patent it is not necessary to go back 20 years, as his patent is only dated 1859. If your correspondent, therefore, can prove that "the very same process" was worked commercially and successfully even 10 years ago it will be quite sufficient for those who have made up their minds to try to break down this monopoly. I trust, therefore, that your correspondent will, in next week's *Journal*, give us those precise facts and figures we so much require.

ALKALI.

*Liverpool, March 18.*

## MINING IN CALIFORNIA.

SIR.—Tuolumne and Calaveras counties are termed the middle mines—the former has a great number of quartz lodes in different parts of the county, and also contains rich deep and surface diggings. Many of the quartz lodes have been worked with considerable advantage by working miners—perhaps six or eight, or even twenty—and rock yielding a small portion of gold remunerates the parties interested. As you are aware, a great number of companies have been launched at different times for working mines in California and Australia, and I may say have generally ended in disaster. I can speak from experience that a great deal of it may be attributed to the large number of useless and inefficient officers sent out as directors and managers, and possibly not one of them having ever had any experience on auriferous lodes, or the kind of machinery required or best adapted for the different kinds of rock that would come under their notice. A man may be a good lead miner, or have worked in Dolcoath or Tincroft all his life; still he is by no means qualified to take charge of a gold mine. I may also remark that a great many persons have an idea that a gold mine that pays working miners would do wonders if a company had it; but no greater error can be imagined. I have seen many worked by Americans, English, and Spanish, who have made money; but let a company embark in them with their string of officers, and they generally end in bankruptcy. To resume my remarks on auriferous lodes and deposits. The large lode worked on by Colonel Frémont, in Mariposa county, can be distinctly traced through Tuolumne county into Calaveras county, and considerable work has been done on it at Carson's Hill, but with no great success; the surface or alluvial deposits were more productive. The principal quartz mines are at Angels' Camp, and also at Vallecitos, on a large lode containing a quantity of sulphurates; but Calaveras has not been a rich quartz-producing county. At Angels some first-rate machinery could be seen, principally on the same plan as is generally used in California. The sand or residue from the stamps has attracted considerable attention, and quartz miners differ very much in opinion as to the best mode of treating it. Some calcine it, whilst others use certain chemicals. I remember seeing some experiments made on the sand with a new style of amalgamator and chemicals to sett the gold free. The Mexican arrasta is often used for amalgamating as well as the stone grinders—or, more properly speaking, edgurunners—and with proper care and attention they are good for small quantities.

The Amador Company has been productive in quartz lodes, particularly near the town of Jackson. Some years ago I visited the Heywood Mine, which has been worked extensively, and, I believe, has continued productive in depth. I found the lode large, and strongly charged with sulphurates of iron, &c.; the stratum a soft micaeous slate, which requires careful timbering. The machinery consisted of a splendid battery of stamps, on the revolving principle: notwithstanding that the old-fashioned Cornish stamps does good duty, still I believe many of them will bear favourable comparison with Cornish stamps as to duty, as many of the quartz lodes are nearly as hard as our Cornish tin lodes. A good set of stamps on the revolving principle can be seen at the Prince of Wales Mine, Dolgelly, North Wales. Several kinds of amalgamators are used, amongst others are Knox's patent, which are similar to the ones erected by Mr. Mosheimer at the Vigna and Clogau Mine, and others in Merionethshire, North Wales. The pulverised quartz passes over blankets, washed, and the sand operated on in the amalgamators. There are four short arms or mullers for grinding and working the mercury, for the purpose of amalgamating. I may say that the pan is divided into four compartments, and lined with copper-plate, and washed occasionally with nitric acid. By the continual motion of the arms the amalgam is formed on the plates, which are taken out, scraped, and retorted in the usual way. There are great many different opinions as to the use of the amalgamators, on account of the small quantity that can be worked, and also the loss of mercury is great, even with the greatest attention. At the celebrated New Almaden Mines I remember seeing mercury that had filtered through the ground for 25 ft. under the bed of the furnace, possibly through the neglect of those in charge, or a defective furnace. In small and rich lodes amalgamators may be used with considerable advantage, but in poor lodes, and where large quantities have to be operated on they are useless. I was surprised some time since, in reading the statements made at the meeting of the Vigna and Clogau Mine, that with a yield only of 1 dwt. 18 grs. per ton a profit could be made. I must confess that I cannot understand how it can be done, as, calling it 2 dwt., which barely amounts to 7s., then take the cost of extracting the ore, spalling, carriage, reduction, wear and tear of machinery, superintendence, &c. I believe they have the small Hungarian pans there.

*Norrköping, Sweden, March 8.*

W. HOSKIN.

## ST. JOHN DEL REY MINING COMPANY.

SIR.—Being interested in the re-opening of the St. John del Rey Mine, and seeing that the directors have been in communication with experienced mining engineers in this country, and are prepared to forward suggestions for the consideration of the people on the spot, I would suggest that the directors should be particularly careful not to put too much reliance upon the opinions of mining engineers of this country. I do not say this in disparagement of the home engineers, but I am sure there is more than one at Morro Velho equal to the best man in England that could be found, especially if he have the disadvantage of never having been on the spot. The mining engineers of Cornwall and Devonshire are very competent men in their countries, but the St. John del Rey is altogether an exceptional mine. I consider the best thing to do would be to have nothing more to do with the old excavations, but sink two more shafts in firm ground, which could be done at a small cost. Then tunnel from the shafts below the present excavation, leaving a portion of the present bottom as a roof or penthouse for the future safety of the operators and the mine. To make speedy work of the shafts, they might each of them be worked upon at five or more different points, which is not unusual even in ordinary mining. The old excavation could be used as a convenience from which to reach the lines of the new shafts at various depths, so that sinking and raising might be carried on and the shafts completed in a short time. It may be said that 200 fms. is too great a depth. Not so; the depth matters but very little. Depths, as well as distances, can be shortened by a speedier conveyance, and if the St. John del Rey people go the right way to work the mine can soon be opened from an entirely new point, brought into full operation, and worked 20 per cent. cheaper than before. If the mine from its present entrance is 200 or more fathoms deep, by taking advantage of the unevenness of the surface, might not be so deep by a good deal. It may be said, too, if the shafts are made away, and at any great distance from the present entrance of the mine, that the stamp will have to be removed. But here, again, I say not so. The great drawing-machine certainly would have to be removed within a convenient distance of the shafts, and an inclining plane could be constructed to raise or lower the produce, as might be required from the landing places at the shafts to the present working floors, but the stamps or other machinery might remain where they are. The people at the mine would, doubtless, select a site for the new shafts as low as possible, always keeping clear of any risk of mining flooded in the wet season. About nine or ten years ago there was a leakage at the mine, but the damage was soon repaired, and the mine became more productive than ever; and I do think the directors would be wise in getting at least the advice of those who got them out of the last difficulty, and who surely would be the most likely people to help them out of their present trouble. Some engineers not acquainted with the mine might

suggest masonry in some way applied as the best means for repairing the damage, but that would not do, nor could masonry ever have done instead of the stumps which were constructed for the safety of the mine.

I beg to apologise for an omission in my letter of March 3. In alluding to the appointment of superintendents of foreign mines I mean a friend not experienced in mining. I do not accuse the directors of any company of doing an intentional wrong.—March 10.

#### THE DARIEN CANAL—No. XIV.

SIR.—The only inhabited place on the line was the village of Su-cubti, population about 70, which was set fire to by the inhabitants, and abandoned upon the approach of Lieut. Strain, United States Navy, on Jan. 25, 1854. When Mr. Gisborne arrived there on Feb. 8, he found nothing but the fragments of some canoes, which had been smashed up to render them useless. The people, probably, removed to Asnati, and it is likely that the place will never be reoccupied, as it was formerly the custom of the Indians to quit for ever any place that had been visited by Spaniards. The only villages within 10 miles of the line were—Agla, on the Agia-tumati, three miles above its mouth, and Sassandra, Asnati, and Moreti, the population of each being about 60. Agla and Sassandra were abandoned in 1854, on the arrival of the Darien expedition. The Darien Indians claim that part of the country which extends from Caledonia Harbour to the Chuquanaqua, but it is probable that they would cede it in exchange for a part of the coast from Cape San Blas to Portobello, which has now, in an extent of 45 miles, only the hamlets of Culebra, Palenque, and Nombre de Dios, with an aggregate population of 150 negroes, who are descendants of charrones, or Spanish maroons, and are only nominally subject to New Granada.

The Darien, San Blas, or Mandinga Indians inhabit the Atlantic coast of Darien, from Boca Tarena, the most western mouth of the Atrato, to Cape San Blas, a distance of 187 miles. They call themselves Tooleh, a word signifying "people." They have always maintained their independence, and do not perceive any official or citizen of New Granada on land on their territory; and they

never go themselves to the Pacific side of the Isthmus, nor allow any of the natives of the Granadian land to cross over to the Atlantic. The entire Indian population does not exceed 3000 souls, and the only inhabitants in the south of Darien are 1300 Granadians who are negroes, and speak Spanish. Thus, strange to say, there are only 4300 inhabitants, most of whom are savages, in a country 157 miles in length, with an average breadth of 60 miles, having a soil of amazing fertility, capable of yielding the most valuable productions, and occupying a most commanding position for commerce, situated, as it is, between the Atlantic and Pacific, with magnificent harbours on each, and at only eight days' distance by steam from New York, and seventeen from England. It seems still more strange when we reflect that the narrowest neck of land between the two oceans is there, and that there also the first settlement was made after the discovery of America—Santa Maria la Antigua del Darien having been the first town built on the American continent. Nevertheless, there is yet neither path, track, trail, nor any way of transit across the Isthmus of Darien. A full account of this very interesting tribe will be found in the "Transactions of the Ethnological Society," just published by Murray.

E. CULLEN.

#### MOSQUITO LAND SECURITIES.

SIR.—May I beg the insertion of the accompanying letter, addressed by me to the President of Nicaragua, Don Fernando Guzman, and which by an oversight was not included in your very able report of the meeting of the Mosquito Land Security holders, held at this office on Thursday last, the 12th Inst.

4, Westminster Chambers, Victoria-street, March 17, 1868. BEDFORD PIM.

TO HIS EXCELLENCY DON FERNANDO GUZMAN,

PRESIDENT OF NICARAGUA, ETC.

MOST EXCELLENT SIR.—It becomes my duty, as representative of the Mosquito people, to address you on the subject so long known as the Mosquito question. Having had a large experience in this matter, and being recognised as the warm and proven friend of both Nicaragua and Mosquito, overtures were made to me by the late Government of Nicaragua (just before your Excellency became Chief of the Republic) to smooth the way, and bring about, if possible, the annexation of the Mosquito Reservation, a measure of great importance to Nicaragua, not merely in respect of the acquisition of a large and most desirable cession of land, but as a certain means of removing a source of weakness and danger, the Mosquito coast affording a ready means of access to the interior of the Republic for filibusters or other civil-disposed persons. There were weighty reasons why I could not undertake the mission then offered to me, and I was especially influenced in declining the honour from the hope, subsequently realised, that General Martinez would be sent by your Excellency on a special mission to the Government of my country on this subject, as it seemed most desirable to me that a Nicaraguan of distinction should pay a visit to London, and when there, by his active support and countenance of those efforts which I have made with so much personal sacrifice to attract the attention of capitalists to your country, confirm and strengthen the good opinion which I have laboured so long to establish here. After leaving Nicaragua I visited Mosquito, and at Blewfields, in May last, was received by the Mosquito people in public meeting assembled to act on their behalf, with a view to the satisfactory settlement of the much-vaed questions at issue. I accepted the appointment, because, being a personal friend of General Martinez, I anticipated no difficulty in making an arrangement which, while it would give me great satisfaction to Nicaragua, would finally set at rest, in a manner pleasing to all parties, this most troublesome matter. On the arrival of General Martinez in London, I found to my great disappointment that the distinguished gentleman whom I had hoped would have accompanied him, Don Antonio Silva, and whose tact, knowledge of the question, and liberal views would have assured success, did not form part of the delegation. I had, however, the pleasure to show General Martinez and his companions all the public and private hospitality they could wish for, and which I flatter myself has not been exceeded by anyone at any other place they have visited during their absence from home. Nevertheless, although nothing could have been more auspicious towards a solution of the Mosquito question, and that, in fact, the annexation of Mosquito is as far off as ever, for Lord Stanley cannot permit the slightest infraction of the treaty of Managua, and as Americans as well as English are now interested in its maintenance, it will be hopeless to attempt the absorption of the Reservation without their concurrence; for instance, Mr. Morris, of New York, and the writer cannot think of giving up their rights and privileges at Pim's Bay, and those derived from the Mosquito Concession, without a proper understanding. Had General Martinez taken my advice, he might have left London, not only with the Mosquito question definitely settled, but have ensured so large an emigration to that shore as would have greatly added to the wealth and strength of the Republic, besides closing the door against designing persons, who are reported to be ready in case the Mosquito people seek their aid to occupy the territory. I allude to the Mormons located at Salt Lake City, but who for political reasons are thinking of leaving the United States and setting up for themselves, and whom your Excellency is doubtless aware include among their body an army of well armed and drilled soldiers, very nearly approaching in number the total population of Nicaragua. Their occupation of the Mosquito coast would, therefore, mean in reality the occupation of Nicaragua, a proceeding which would be looked upon without the slightest resentment by Europe, while the United States would be only too glad to be so easily rid of a turbulent nation, for ever giving trouble in their midst. I have put these considerations fairly and frankly before your Excellency. You may count upon my support to propose, but as the representative of the Mosquito people I must defend their rights and privileges at all hazards.

I am, most Excellent Sir, yours very sincerely,

BEDFORD PIM,

Representative of the Mosquito People.

Central American Association, 4, Westminster-chambers, London, Jan. 18, 1868.

PETROLEUM AS FUEL.—At the recent meeting of the Polytechnic Branch of the American Institute a patent cooking range was exhibited, which makes use of petroleum of 70° fed from a reservoir. The exhibitor, scoffing the general opinion that petroleum of the kind used was explosive, was particularly anxious to convince his hearers of their mistaken views, and offered to them and there test the truth of his remarks. Several members of the club refused to credit this statement, expressing the opinion that petroleum emits a gas which is always explosive, which was specially re-affirmed by Dr. Rich, as the result of six months' experiments by a committee of which he was chairman. An experiment in baking bread was made and accomplished in exactly 30 minutes, as had been previously claimed. This form of range has certainly all the merit attributable to convenience and cleanliness, but whether it is as perfectly safe as the exhibitor claimed is a question his hearers seemed to think required further and more conclusive experiments. It makes its own gas for fuel, requires no stove-pipe, maintains a regular heat, and is more economical than wood or coal stoves.

LITHOLOGY OF THE BRITISH SEAS.—M. Delesse last week laid before the French Academy of Sciences a large map of the various beds and rocks constituting the bottom of the British seas. This bottom chiefly consists of sand, slime, more or less mixed with the latter, and different kinds of shells. The latter, already consolidated, are anterior to the present period, and do not receive deposits. They stretch far into the sea from the N.W. coasts of Scotland, the Orkneys, and the Hebrides; they also exist at the mouth of the Shannon and the N.W. coast of Ireland. In the British Channel they mark the junction of Cornwall with Brittany; they also mark those of the Isle of Wight and Portland with the Continent. To the east of England these stony formations are hardly to be met with elsewhere than at the mouth of the Tees and in the direction of Cape Flamborough. They generally form the bottom of the straits and firths that are washed by rapid currents. Shifting deposits are larger in proportion to the rapidity of the waters that have borne them. The most important consist of sand, which occupies immense space on the Atlantic Coast, the Bristol Channel, and the German Sea. Gravel deposits, which are not extensive, are to be found on the western coasts, in the Bristol Channel, between the Land's End and the Scilly Islands, and south of Cork. Flint shingle borders the white cliffs of England, but is also met with in the German Sea in the latitude of the Orkneys. Shelly deposits are peculiar to the mouth of the Thames, Southampton Water, Firth, and the Irish coast of St. George's Channel. At various points of the coast there are marine deposits of molluscs and shellfish. They are somewhat rare on the eastern coast of England and the southern one of Ireland, but very frequent in the Irish Sea, and all round Scotland, especially in the Minch, and between the Orkneys and Moray Firth.—Galignani.

LONDON GENERAL OMNIBUS COMPANY.—The traffic receipts for the week ending March 15 amounted to 10,159. 11s. 6d.

HOLLOWAY'S PILLS.—Any dyspeptic sufferer aware of the purifying, regulating, and gently aperient powers of these pills should permit no one to cloud his judgment or to wrap his course. With a box of Holloway's pills, and attention to its accompanying "directions," he may feel thoroughly satisfied that he can safely and effectually release himself from his miseries, without impairing his appetite or distressing his digestion. By aiding natural nutrition, this excellent medicine raises the bodily strength to its extreme limits, and banishes a thousand annoying forms of nervous complaints. An occasional resort to Holloway's remedy will prove highly salutary to all persons, whether ill or well, whose digestion is slow or imperfect, usually evidenced by weariness, listlessness, and despondency.

#### Meetings of Public Companies.

##### DON PEDRO NORTH DEL REY MINING COMPANY.

The sixth ordinary general meeting of shareholders will be held on Monday.

The report of directors (to be submitted) states that the total produce for the year has amounted to 183,711 ots., which has realised the sum of 79,044. 5s. 9d., and after charging to revenue the entire expenditure of the company (the cost of obtaining additional property adjoining Maquine being alone excepted), the profit on the year's operations amounts to 54,421. 3s. 9d., or upwards of 100 per cent. on the paid-up capital of the company. The dividends already declared for the quarters ending March, June, and September amount to 39,972. 11s., and the balance now standing at the credit of profit, and loss account is 25,293. 11s. 7d. This amount the directors recommend should be apportioned as follows:—To the payment of a dividend of 5s. per share, free of income tax, which will absorb 19,516. 10s. 3d.; the transfer of 3500 to a reserve fund; the reduction of the preliminary expenses account to 2500/-, by writing off the sum of 1000/-, leaving a balance of 12774. 18s. 4d., to be carried forward to the next account. The dividends thus paid for the year 1867 will amount to 18s. per share, or about 92 per cent. upon the paid-up capital of the company. Referring to the detailed reports from Capt. T. Treloar and the mining captains, the directors think it only requisite to draw special attention to two points, therein:—Firstly, that the results already obtained strengthen Capt. Treloar in his opinion that far greater results will be realised in the future, as will be seen by the following extract from his report:—“And seeing that I have so far read the signs at Maquine with delight, feel that I am only doing my duty by repeating, more or less, what I stated last year—that I have no desire to raise expectations unduly, but that I can look upon the great extent of our jacutinga formations at the present and freedom from water, and the almost virgin state, at the people.” The Don Pedro has always maintained their independence, and do not perceive any official or citizen of New Granada on land on their territory; and they

never go themselves to the Pacific side of the Isthmus, nor allow any of the natives of the Granadian land to cross over to the Atlantic. The entire Indian population does not exceed 3000 souls, and the only inhabitants in the south of Darien are 1300 Granadians who are negroes, and speak Spanish. Thus, strange to say, there are only 4300 inhabitants in a country 157 miles in length, with an average breadth of 60 miles, having a soil of amazing fertility, capable of yielding the most valuable productions, and occupying a most commanding position for commerce, situated, as it is, between the Atlantic and Pacific, with magnificent harbours on each, and at only eight days' distance by steam from New York, and seventeen from England. It seems still more strange when we reflect that the narrowest neck of land between the two oceans is there, and that there also the first settlement was made after the discovery of America—Santa Maria la Antigua del Darien having been the first town built on the American continent. Nevertheless, there is yet neither path, track, trail, nor any way of transit across the Isthmus of Darien. The directors whilst congratulating the proprietors on the success already obtained, feel every confidence from Capt. Treloar's report that even greater results will yet be realised.

The annual report of Capt. Thos. Treloar states that he had much pleasure in forwarding the annual reports for 1866, but still more, in transmitting those for 1867. The result of the operations is much more brilliant, indeed it is such as will, he was sure, be highly gratifying to every well-wisher of the company. But good as it is, it would have been better had the force been adequate to the wants, but it has not. The unfortunate war with Paraguay still continues, and until it is over the hands required will not be fears, for forthcoming. The gold return is by far the highest yet obtained, the profit magnificent, and, viewed in connection with the cost, it speaks volumes in favour of jacutinga mines. The monthly gold returns, however, have fluctuated. In one month the produce has been as low as 6318 ots., in another as high as 29,060 ots.; but, as he had before reported, such variations are characteristic of jacutinga mines, low returns, therefore, should not cause great depression, nor high ones great excitement. Jacutinga mines of the right sort, when properly wrought, are sure, as a rule, to render a good account to the bona fide proprietors. The success has been derived, again, from the jacutinga formation at Maquine; and he mentions that it has given a most tangible proof that he has so far read the indications aright, and his belief, therefore, is greatly strengthened that it is a spot of astounding promise. There are six beds of jacutinga, and all the gold raised hitherto has been obtained from the third one. But gold will assuredly be found in the other beds; explorations, therefore, are a great desideratum, and during 1868 he hopes more force will be devoted to this interesting and important division of the works. The mine so far as opened is well opened, and adits are in progress for drainage and working in depth. Tram-roads are laid down in all the levels, and at the incline plane follows down the excavations on the lines of gold. He may be mistaken, for no man can see into a mountain, but seeing that the vein lode or auriferous run of ground for 24 fathoms at least, measures square with the dip and the lines of gold therein, are well-defined, and each successive batch of gold in descending order has been richer than the previous one, and that water has been an important agent, he cannot but hold that that very last deposit of gold will be found in the shoulder. The works on the third bed are yet 54 fms. from reaching this interesting spot, and it will not surprise him if the outer edge of the great deposits and water be struck simultaneously. The adits, therefore, must be hastened forward, with all convenient dispatch, for besides the necessity of fordrainage, they are first-class explorations. Mining upon all lodes is a venture, and banking companies, railway companies, marine companies, and indeed all commercial enterprises, are more or less a venture, and those who embark their money in them should bear this fact in mind. But when mines are carefully selected, and properly wrought, but few, if indeed any, speculations pay better than mining.

##### WHEAL TRELAWSY MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, Bishopton-street Within, on Tuesday,

Mr. W. NICHOLSON in the chair.

Mr. W. J. LAVINGTON (the secretary) read the notice convening the meeting, and the minutes of the last were read and confirmed.

A statement of accounts was submitted, which showed a debit balance of 349. The reports of the agents were read, as follows:—

March 14.—Trelawny's engine-shaft is down to the 220, according to the time we anticipated; the last 10 fms. sunk we turned the shaft, with an incline of 1½ in a fathom, towards the lode; we calculate to have about 8 fathoms to reach the same, and in order that no time may be lost to accomplish this object we have set the men to work at the extreme bottom of the shaft at once, and when they have advanced a few fathoms, so as to be no hindrance to the shaft, we shall raise the sinking and at the same time lay a timbering. We are glad to say the description of the ground is such that seldom or ever lodes fail to be found productive in. The 210 south of the shaft, for the distance driving, measures from 5½ to 7½ per fathom; in the extreme end we have a hard bar of ground, however it has had no influence in disordering the lode, which is now worth 7½ per fm., a very kindly end. We have a winze sinking by the side of the lode in the bottom of the 196 about 5 fathoms in advance of the end, and is down 8 fathoms 3 feet; no time will be lost in hastening down this winze for ventilation, and setting tribute ground. In the 210, north of the shaft, the lode and capel is over 6 ft. wide, producing good stones of ore; the water seems to be on the increase, which we expect will shortly drain the level above, and thus enable us to sink winzes, and open out ground speedily in the run of ore ground named in our former reports for 60 fathoms in length, worth from 5½ to 30 per fathom. At Smith's engine-shaft (the 210 north) the lode in the end to day is presenting a much better appearance than we have seen it for some time past; it seems to be forming a regular lode in the capel, with good stones of ore. A winze sinking by the side of the lode in the bottom of the 196 about 5 fathoms in advance of this end, is down 4 fathoms for ventilation, and proving the lode; in the same level south, within the last 2 fathoms, the lode is improved, opening out moderate tribute ground. We have of late been putting up a rise in the back of the 196, north of Chippendale's shaft, as well as sinking a winze in the bottom of the 182; by this communication we shall push on the ends more rapidly, and set an additional tribute pitch. We are looking forward for an improvement in driving this end (the 196), seeing we have a long run of ore ground gone down in the bottom of the 182, worth 12½ per fathom. Although our ends at present are not rich, yet still our chances are great, seeing we are nearing the shoot of ore in the 210, gone down before us in the bottom of the 196, and so far in the same level south the lode has been more productive than in the level above; and that Trelawny's shaft is down to the 220, and we hope to cut the lode in about three months, by which you will perceive we are now in a good position in opening out the mine, and will, in our opinion, ultimately lead to successful results. We sold during the quarter 176 tons of silver-lead ore, realising 3460/-, and we shall sample again at our usual time, being the first for the ensuing quarter, from 60 to 70 tons. The engineers are in full course of working, and no doubt the new engine will be set to work in about five weeks from this time, which is very much wanted. We have employed underground on tribute and tribute, 206 men; other underground men, including trammers, fitters, &c., 25; men, boys, and girls at surface, 132: making the total number of hands employed throughout the mine, 363.—WM. JOHNS, THOMAS GREENFELD, JOHN PRYOR.

March 16.—Since the report has been written of this mine for the meeting tomorrow I have had the opportunity of thoroughly examining the workings of Wheal Mary Ann with one of our agents here, and have much pleasure in saying that we are more than ever convinced that our chances in this mine (Trelawny) are exceedingly encouraging, for this reason—Mary Ann is reported to be 230 fms. in depth, but in reality the measurement is 300 fathoms, thus showing that the extreme bottom of our mine—the 220 fm. level—is only equal to their 180. The ground and lode at both of these points are precisely similar in character and appearance, which is another proof of what I have stated about these levels being equal; and, as Wheal Mary Ann is deepening, the ground is not only considerably easier, but the lode is also very much improving. I would also remind you that they have had at Mary Ann a continuous shoot of ore from surface; but, notwithstanding all this, they have had several poor levels; and had they not persevered with the sinking of their shafts they would certainly not be in the favourable position they are now. Similar remarks are applicable to us, as we had a good shoot of ore nearly from surface, which has lasted down to our 196, with, however, occasional poor levels; but, seeing the present state of Mary Ann, which is about 80 fms. deeper than our workings, we are, I think, quite right in saying that by sinking our shafts we shall yet open a good mine, and which can, I think, be borne out by the remarks referred to.—WM. JOHNS.

The CHAIRMAN moved that the reports be received and entered on the minutes, and that the accounts be passed and allowed.

Mr. PETER WATSON (a member of the committee) thought it necessary to inform the shareholders in explanation of the accounts just rendered that during the past four months there had been incurred a loss of 1036/-, and that 1207. had been charged on account of the new engine. At the previous general meeting the question was brought forward with respect to the improper payment of a cheque. The City Bank offered a compromise, which the committee refused; and the bank eventually paid the amount in full. With regard to the application to the lords for a reduction of the dues, they had to inform the shareholders that Mr. Trelawny, with his accustomed liberality, and also Mr. Cartwheel, had agreed to give up the dues, provided Dr. Honey agreed to do so, and from what they knew of Dr. Honey there was no reason to anticipate that he would not

readily accede to a proposal the result of which could not fail to be of great pecuniary advantage to the landlords, as it would act as an incentive to the shareholders to vigorously develop the mine.

The CHAIRMAN, in reply to a question, stated it had been suggested to him that the present number of shares should be sub-divided, so as to diffuse them over a greater surface,—Mr. E. COOKE said there would be quite enough shares when the payment of dividends was resumed.

The SECRETARY, in reply to a question, stated that during the current four months the returns would be about the same as they had been during the past four months, and the costs also would be the same, so that the loss would be about 1000/-.—The report and accounts were received and passed.

After some discussion with regard to the amount of call, it was unanimously agreed that it should be 15s. per share.

The committee of management were re-elected. A vote of thanks to the Chairman man terminated the proceedings.

##### LOVELL CONSOLS MINING COMPANY.

A general meeting of shareholders was held at the offices of the company, 2, Bucklersbury, City, on Tuesday,

Mr. WILLIAM BECK in the chair.

The statement

ceeded to say that he had great pleasure in meeting his fellow-adventurers, more especially as the balance was on the right side of the account, and at the same time it afforded him an opportunity of congratulating them on the satisfactory state of their property. It was pleasing to know that although times were somewhat hard they were in a fair way of giving the adventurers a dividend. As to the mine itself, the report fully pointed out its position and the value of the different points of operations; and the managers of their property being present, the adventurers could avail themselves of the opportunity of gaining any information in addition to that which had already been given in the report. In conclusion, he again congratulated the adventurers on the satisfactory state of their property, and trusted that the time was close at hand when he should be in a position to give them what they all wanted—dividends.

Mr. W. JOHN LAW (London) felt assured that all those concerned in the undertaking would agree with him in saying that the accounts and report were of a nature to give the uttermost satisfaction to all interested in its success. He had a very large stake in the undertaking, and had for many years attended the meetings on behalf of those shareholders who were absent, and could not help saying that he felt pleased at seeing so many of the old adventurers who had been present at meetings on former occasions. It looked well he thought, for it certainly went to prove that they had every confidence in the ultimate success of the undertaking. Beyond all doubt they had a very valuable asset in North Levant, and it was gratifying to know that if tin were to rise in price, as beyond all doubt it would do, they would, he thought, at once be able to declare a dividend; but supposing tin to remain at the present low figure, he felt sure that before long they would find a good round sum to the credit of the adventurers, inasmuch as the mine continues to improve, and when the railroads which were being laid down were completed the amount of stuff that would then be brought to surface would, he thought, prove all that has been hitherto said by competent judges respecting the value of the asset. (Hear, hear.)

A SHAREHOLDER asked if the gentleman who had just spoken had been underground since the last meeting?—Mr. LAW said he had not been underground since the last meeting of the adventurers, but he believed that one of the gentlemen then present had that morning inspected the workings.

Mr. Y. CHRISTIAN (the gentleman referred to) said that he had no desire to occupy the time of the meeting, but as a shareholder he thought it only right to say that he had that morning been underground, and he could unhesitatingly assert that North Levant, as a progressive mine, was second to none in Cornwall. He was pleased to be able to say that the whole of the workings had evidently been carried on with zeal and economy, and in his opinion the report of Capt. Bennetts and Thomas was a comprehensive and honest one, and he had much pleasure in acknowledging the services he (Capt. Thomas) had rendered him that morning while inspecting the sett. He felt great pleasure in meeting so many of his fellow-shareholders, and felt convinced that when the report was read by those not present at the meeting they would agree with him in saying that the affairs of the adventurers had been admirably managed. He was quite sure that the time was not far distant when they would all stand in a far better position, and one that would give them good reward. He thought they were all indebted to Messrs. Higgs and Son (purasers) for the energy, shrewdness, and ability they had always shown in conducting the affairs of the company. He congratulated them on the very satisfactory state of their property, and more especially knowing, as he did, that there was no likelihood of a call being necessary (hear, hear), but every probability of the mine taking its position in the Dividend List. (Cheers.) He had travelled many miles for the purpose of having an opportunity of inspecting the sett, and he was highly gratified with the result. (Cheers.)

The motion adopting the report and passing the accounts was put and carried unanimously with acclamation.

#### GREAT WHEAL VOR UNITED MINING COMPANY.

The quarterly general meeting of shareholders was held at the offices, Gresham House, on Wednesday,

Mr. GEORGE NOAKES, F.G.S., in the chair.

Mr. W. TRURAN (the secretary) read the notice convening the meeting, and the minutes of the last were confirmed.

The report of the committee of management was read, as follows:—

The committee beg to state that the mine maintains its productive character. Some points have, however, declined, while others have improved, but the confidence of the committee in the permanent prosperity of the mine is unabated. The lode in the 204, west of Metal shaft, which for the last three months has been worth over 100/- per fathom, is now poor; but as the winze sinking below the 194, west of Metal, and 10 fms. end, the level of the 204 fm. level end, is going down on a good lode, it is hoped that the 204 fm. level end will again improve. The ground west of Ivey's shaft continues to open up good reserves. The prospects at Edwards's shaft are very encouraging. The lode in the 102 has become productive; it is daily expected to cut the lode in the next level below. Should it open out well the mine will be much enhanced in value. The run of ground east and west of Edwards's shaft is comparatively shallow, and in whole ground, of a conoidal character. The development of the mine is being prosecuted throughout with great vigour. The number of men employed underground on tutwork and stonewalling is 232. There are no tribute pitches in the mine, but at surface the lower silines are dressed on tribute. The average cost of sinking and driving is 10/- 4s. 4d. The average earnings of the tutwork men is 37. 7s. per month. The total number of persons employed at surface and underground, including dressing-floors, is 606. The skip-roads at Metal and Ivey's shafts have greatly facilitated the haulage of stuff from the mine, enabling larger quantities to be raised in less time, less wear and tear, less cost, and less consumption of coals. The committee observe with much satisfaction the spirit of improvement which is now showing itself in the working of mines in Cornwall, both as regards the more speedy mode of opening up ground as well as in the attainment of the cheapest method of extracting the ores; and where proved to be practically advantageous the committee desire to give them every support and encouragement. The trial of Doering's machine at Tincroft Mine gives hope, from its practical application, that the period is not distant when the risks attending mining enterprise will be lessened by the application of machinery in underground workings. Finally, as statistical accounts inform us, the stocks of oil on hand are diminished, the supply short, and the demand increasing, it is to be expected that the price of tin will advance. The committee earnestly hope that these expectations may be realised, that the shareholders may enjoy more substantial benefits from their great and productive mine.

The report of the agents was read, as follows:—

March 17.—Ivey's shaft is sunk about 3 fathoms below the 194; we have not taken down any lode for about 2 fathoms sinking; it has taken a more perpendicular underlie than the proper angle of the shaft, and unless it changes its underlie we shall have to cut across it at the next level a plunger lift has been fixed, and we are now in a good position to make good progress in sinking; the last time we sank the lode from the shaft it was worth 50/- per fathom. The 194 west is driven about 8 fathoms; lode about 18 in. wide, worth 25/- per fathom. The 194 east is driven 8 fathoms; lode 20 in. wide, poor for tin, worth 10/- per fathom; we have about 8 fathoms more to drive to communicate with the 194, west of Metal. The 174 is driven on a lode about 2 ft. wide, a very kindly lode, but poor, worth 10/- per fathom. The lode in the 162 west is 3 ft. wide, worth 10/- per fathom. We have commenced sinking a winze below the 157 to communicate with the 162 for ventilation; the lode in the winze is 2 ft. wide, but not yet taken down. We have completed tramways in the 174, east and west, and also in the 162, with proper shoots, which have greatly facilitated the dispatch of the stuff. The stopes in this part of the mine are yielding their average quality tin-stuff, and looking very well. The skip-road in this shaft works well, and we have also altered the stroke of the engine, which will, no doubt, be of considerable advantage to our keeping the mine well drained; the shaft is sinking by 16 men, and shall be prosecuted with all possible speed. Metal engine-shaft is sinking below the 216 by eight men, and cross-cut driving north to the lode by eight men; the ground in the cross-cut being moderately easy, we hope to reach the lode in about two months. The 204 has been driven west about 27 fathoms; in a portion of this driving, about 9 fathoms the lode has been very rich, and left a rich lode both in the back and bottom of the level. We are sorry to say, however, that for the last 2 fathoms the lode has been much disordered by muddle, and poor for tin, now worth 10/- per fathom; we are expecting an improvement, as the muddle is wearing out, and more water coming from the lode. The 194 fm. level end, west of cross-cut, north part, is worth 8/- per fathom. The lode in the 194 east, on north part, is 15 in. wide, worth 12/- per fathom. The winze sinking on this part of the lode in the bottom, marked No. 2 on the plan, is on a very kindly lode 20 in. wide, worth 15/- per fathom; having this promising lode in the bottom of this level, and being several fathoms west of the 204 fm. level end, encourage us to hope that the 204 fm. level end will soon improve. The 194, west end, is on a very kindly lode 2 ft. wide, worth 7/- per fathom. A winze is sinking below the 204 to communicate with the 216 fathom level cross-cut; the lode is small and poor. The 174 fm. level cross-cut, on the lead branch, is driven within a short distance to the south lode; we are expecting to find a lode productive for tin, from our having a productive shaft in good order, and working well. All the stopes in this part of the mine are looking very well. In this part of the mine we have also laid down tramroads in the 184 and 194, east and west, and fixed the necessary shoots; we have still a great deal of accumulated tin-stuff in this part of the mine to draw up. Edward's shaft is sunk to the 114; a cross-cut has been driven 2 fathoms towards the lode, and we expect from its underlie in the level above to have reach it in 9 ft. It must, therefore, have taken a less underlie, and we are, however, hourly expecting to come on it, as there is water coming from the end the last 2 or 3 ft. driving very strong. The 102 has been driven about 9 fms. east; the lode has been about 2 ft. wide, and productive for tin, now worth 15/- per fathom. We expect to communicate this end with the 100, west from Ivey's, in about a fortnight from now, when we shall have good ventilation to prosecute the 102, west from shaft, and also the 114, and hope to open up a large quantity of productive tin-ground. Within the last six months our explorations have been very limited, owing to our fixing the two skip-roads and plunger-lift at Ivey's, which we have no doubt has prevented us from making more important discovery. We are glad to say we are now prosecuting by the same men, who were otherwise engaged, some important points, which we feel very confident will lead shortly to profitable results. Enclosed I beg to send you bills for tin sold yesterday, and are sorry to say there is no rise in price from former sale, and feel very much disappointed.—THOMAS JULIAN, STEPHEN HARRIS, JOHN JAMES, HENRY JULIAN.

The CHAIRMAN said he did not know that he could add anything of importance beyond that communicated in the reports just submitted; but it had been the custom at these meetings for him to make some observations upon the general position and prospects of the mine. He beheld with pleasure upon the present occasion the faces of some shareholders who, although they had not attended the meetings for many years, had held an interest in the mine from its commencement. They had continued their interest from the days of the mine's troubles, and during the period of its prosperity, and he hoped and trusted that they would yet realise still more successful results. It was gratifying to see those shareholders present on this occasion, because it afforded him an opportunity to inform them that in Great Vor they still possessed a good and productive mine; it was his duty, at the same time, to state that while the mine was still very productive, and, judging from the character of the ground opening out, would continue so for many years, yet the ground was not of so rich a quality as the levels above; but as the economic facilities for working the ground had been and would probably be still further extended, his assurance was fortified that in Great Vor they possessed a per-

manently productive property. (Hear, hear.) In saying that he did not wish the shareholders to believe that Great Vor would be free from those ever-recurring vicissitudes and alternations inseparable from mining—one day with prospects exceedingly bright, and the next with everything under a cloud, but it had been their good fortune that the darkest clouds had never been so large as to overshadow entirely the bright prospects, for there had always been something more than the silver lining. (Hear, hear.) This day was the decennial of the present management—at the period when his colleagues and himself accepted the control of this mine it was surrounded with great trials, great difficulties, and great troubles, to which he did not now desire to advert, but merely to express his grateful thanks to the shareholders for the support they had ever given to himself and the committee during the ten years of their stewardship, and also to congratulate himself upon the fact that a considerable portion of that management had been under profitable and successful circumstances. (Hear, hear.) Since 1853 the tin raised had realised 339,227/-, and out of that upwards of 100,000/- was expended in the old mine, from which 60,000/- worth of tin was raised. This should be added 40,000/-, taken from the Vlow and various other parts of the property, making 200,000/-, and the subscribed capital being 200,000/-, made total of 400,000/- During the ten years of the present management 230,000/- worth of tin had been raised, and out of that upwards of 67,000/- had been paid in dividends, showing that about one-third of the value of the tin raised had been distributed among the shareholders. He hoped that statement would be satisfactory; but looking at the mine as it is, and considering the depth attained, it behoved them to see whether they could not only march with the spirit of the time by utilising mechanical improvement at surface, but also whether by the adoption of improved facilities underground they could not diminish the cost of raising, so that the return could be made adequately profitable, although the quality of the ore might be less rich. During the last six months a considerable reduction had been made in the cost of working, by increasing the facility of haulage, and effecting other improvements for the benefit of the shareholders; the committee now contemplated doing that which would benefit their miners also; they proposed to erect a man-engine, the expense of which he hoped would be met without the shareholders feeling it by a diminution of profits or a lessened dividend. He did not apprehend that the working cost would be increased, while, if they should realise an advanced price for their produce, they would be able to pay for this important work, and yet at the next meeting decide the usual dividend. (Hear, hear.) He had made those few observations with a great deal of pleasure and satisfaction, and more particularly so when he reflected that, after 10 years' working, they still possessed a good mine, with considerable reserves, and a large amount of whole ground in the west, scarcely touched, from which he looked forward to realise great results. He believed they had before them a lengthened period of success, and great results. He would proceed to submit the financial position of the mine as it stood this day. It was as follows:—

The added cash account to Jan. 31 showed a balance in hand of £3,582 15 9 Since when there has been received—  
Tin sold in February ..... 3592 3 7  
Ditto in March ..... 3140 8 2  
Old materials sold, and sundries ..... 74 4 7  
Total ..... £10,389 12 1  
And paid—Cost for January ..... £2,330 8 10  
Sundries ..... 4 14 4 = 2,335 3 2  
Balance (cash and bills) ..... £8,054 8 11  
The actual account stands this day as follows:—  
ASSETS—Balance as above ..... £8,054 8 11  
LIABILITIES—February cost ..... £2,509 19 8  
Salaries, &c. (say) ..... 220 0 0 = 2,729 19 8  
Balance in favour of the mine this day ..... £5,324 9 3

The CHAIRMAN said that out of this amount the committee recommended the usual dividend of 7s. 6d. per share, after the payment of which there would be left a balance of 31,082. 19s. 3d. to be carried forward to the credit of the next account. Considering they had put in skip-roads, and that they had a depressed price for their tin, he hoped that statement would be regarded with satisfaction.

Mr. PETER WATSON asked if any information had been received with regard to the lode at Edward's shaft?—The CHAIRMAN said that nothing had been received beyond that contained in the report, but he might mention that he looked forward with considerable anxiety to the result of the cutting of the lode in the 114 fathom level.

Mr. PETER WATSON said he had repeatedly called attention to the importance of sinking Edward's shaft, and he looked forward with confidence to the realisation of important results in that direction. He believed they would have a very rich mine in connection with Edwards's shaft, for it should be recollected that it was situated immediately opposite the main engine-shaft of old Wheal Vor, and was intersected by the same cross-course; and it was at least encouraging to find that a lode had been found there worth 20/- to 30/- per fathom, although it subsequently fell off. It had, however, recently again improved, being now worth 15/- per fathom. He could recollect that about ten years ago, at a similar depth at Ivey's and Metal shafts, there was a bunch of the which, when first opened upon, was worth only from 10/- to 15/- per fm., but it subsequently improved to the enormous value of 300/- and 400/- per fathom. Therefore, having felled off, it had, however, recently again improved, being now worth 15/- per fathom. The shafts at Metal and Ivey's shafts have greatly facilitated the haulage of stuff from the mine, enabling larger quantities to be raised in less time, less wear and tear, less cost, and less consumption of coals. The committee observe with much satisfaction the spirit of improvement which is now showing itself in the working of mines in Cornwall, both as regards the more speedy mode of opening up ground as well as in the attainment of the cheapest method of extracting the ores; and where proved to be practically advantageous the committee desire to give them every support and encouragement. The trial of Doering's machine at Tincroft Mine gives hope, from its practical application, that the period is not distant when the risks attending mining enterprise will be lessened by the application of machinery in underground workings. Finally, as statistical accounts inform us, the stocks of oil on hand are diminished, the supply short, and the demand increasing, it is to be expected that the price of tin will advance. The committee earnestly hope that these expectations may be realised, that the shareholders may enjoy more substantial benefits from their great and productive mine.

The CHAIRMAN (Interposing) said that, in addition to Mr. Watson's suggestions, those made by Mr. Cole were also adopted.

Mr. PETER WATSON (continuing) said that, with regard to the form of accounts, a suggestion had been made in a Cornish paper that the names of the smelters to whom the tin was sold should be appended.

The CHAIRMAN did not know how far that would be advisable; they were not tied to any particular; the object of the committee was to make a good a price as they could for the benefit of the shareholders. The committee, however, would take the suggestion into consideration, and if they found that advantage would arise by its adoption they would not be too happy to carry it out. As far as the form of accounts was concerned, it really was a synopsis of the cost-sheet. It showed the amount of expenditure the returns, the amount paid for materials, and the number of men employed, &c.

Mr. PETER WATSON asked what would be about the cost of the man-engine? The CHAIRMAN said the cost had been estimated at 14,000/-, although it was hoped it might cost less. He should almost have been glad had the question not been put, so that he might have had the opportunity at the next meeting of informing the shareholders that the man-engine had been fixed, and was working well, and that the cost was not felt in the three months' operations.

Mr. PETER WATSON said an advance in the price of the upon one quarter's returns would nearly pay for it.—The CHAIRMAN said they had put in double skip-roads—one to the 194 in Ivey's, and the other to the 204 in Metal; and tramways had been put in six levels, the whole expenditure of which had been met without diminishing the dividends, or the surplus balance carried forward.

The reports were received and adopted, and the accounts were passed and allowed. A dividend of 7s. 6d. per share was declared.

The committee of management were re-elected, and Mr. George Noakes was re-elected Chairman and managing director.

The CHAIRMAN acknowledged the vote, stating that his colleagues and himself fully appreciated this continued mark of the shareholders' confidence, but it would be ill become for him to say more than that they had endeavoured to do their utmost to promote the best interest of the shareholders, but it would be an injustice to say that they did not at all times appreciate an approval of their services.—Mr. E. COOKE asked if the accounts just passed included the costs up to the end of February?—The CHAIRMAN said that the accounts were brought up to this day—the costs for February were included, and the tin sold on March 16 brought against it—therefore, each shareholder knew precisely the actual financial position of the company at the present time—that is, after the dividend just declared had been paid, there was a balance of 31,815/- to be carried forward.—Mr. WATSON, referring to the price of tin, said the opinion of the smelters was that, as soon as the Banca sale had taken place, the price of English tin would advance.

The CHAIRMAN said that arrangements were always made with the smelters that the Great Wheal Vor tin would have the advantage of any rise that might take place in the price of tin.

At this juncture of the proceedings a telegram was received from Cornwall, informing the Chairman that the standard for tin had advanced equal to a difference upon their sale of 1/- per ton.

A unanimous vote of thanks was passed to the Chairman, which terminated the proceedings.

#### MWYNDY IRON ORE COMPANY.

The sixth annual meeting of shareholders was held at the offices of Messrs. John Taylor and Sons, Queen-street-place, on March 14,

Mr. CHARLES CAPPER, M.P., in the chair.

Mr. N. M. MAXWELL (the secretary) read the notice convening the meeting.

The report of the directors stated that the receipts for the year amounted to £26,613. 16s. 4d. The expenditure has been £18,424. 7s. 11d., leaving a profit of £7,189. 8s. 5d., out of which interest upon the mortgage debt, amounting to £102. 17s. 3d., has been paid, and the balance of £6,986. 11s. 2d. has been carried to the profit and loss account, increasing the amount to the credit of that account to £8,641. 6s. 6d. The directors have deemed it right to propose a dividend of 4s. per share on the present occasion out of this balance, and to make a call of 2s. per share at the same time; the result of this will be that the shareholders will receive 2s. per share in cash, and their liability on the balance will be diminished by 2s. per share also. The quantity of ore produced and sold in 1867 was satisfactory, and the profit made, having regard to the very low average price realised, was encouraging. The mortgage debt was reduced to 20,000/- on Dec. 31, since which a further sum of 600/- has been paid off, thus reducing the debt from £31,000/-, at which it originally stood, to 19,400/- The directors are not called upon to pay off any further portion of this loan at present, and it will probably be allowed to continue at 5 per cent. per annum.

The report of the managing directors (Messrs. John Taylor and Sons) stated that a net profit of £6,986. 11s. 2d. was made, after payment of £102. 17s. 3d. the interest upon the mortgage debt. The result must be considered satisfactory in the present depressed state of the iron trade, and the low price which the ore has realised. The quality of the ore is decidedly improved, probably from the increased depth reached in the mine, and from the vein having entered more into the limestone rock than formerly. The demand for ore is better than we could have anticipated, judging from the state of trade generally. The price of labour has lately been reduced, and the effect of this will be felt during the current year. The main shafts and levels in the mine have been carried on with full complements of men, and at several points new portions of productive vein have been developed. The machinery, the railways, and the works generally are in excellent order. They have carefully gone through the plans and sections of the mine upon the ground with Capt. Vivian, and looked through all the items of expenditure with him and the secretary of the company, and are

satisfied that at a fair average price of ore the mine would now yield a satisfactory profit.

The report of the company's resident agent (Captain W. Vivian) stated that to maintain the productive character of the mine the exploratory shafts have been fully kept on during the whole year. Capper's engine-shaft has been deepened 13 fathoms, and a new cross-cut is now being driven towards the vein. It has passed through shale ground 21 fms., and has lately entered the limestone. This new level has already drained the water from the upper levels of this part of the mine, showing that the ground is open and full of cavities generally. The distance yet to drive to the vein depends entirely upon the angle the vein may be found to take in the increased depth; but should it continue at about the same angle it has in the level above it may be met with in 18 to 20 fms. further driving. Taylor's shaft has also been deepened 17 fms., and a level opened southward towards the vein. Just now the best prospects for ore

per ton at from \$75 to \$100 per ton. It is the prevailing opinion of those who have examined the Kentucky that it will become one of the leading and permanent silver-producing mines of the State. Palmetto is 175 miles due south from Austin, and 100 miles south-west from Belmont. At San Antonio, Rigby's little mill is doing good work, having turned out during the past three weeks over 7000 ozs. of crude bullion. In proportion to its capacity, it is one of the most productive mills in the country. It was designed for prospecting, and has a battery of only four stamps, each weighing 450 lbs., one roasting furnace, and one pan. Under the able management of Mr. Rigby, the little affair is of quite as much account as an ordinary ten-stamp mill. The bullion produced at the mill is obtained from ore from the Liberty Mine, which is the valuable property of Mr. Rigby's son-in-law, Mr. J. W. Bailey, agent of the Centenary Company, in Newark district, largely shipped to New York 12 bars of silver bullion, valued at upwards of \$14,000, the product of 14 days' run of the mill. The Timoko Company, at Austin, are preparing to sink a vertical shaft in their ground; it will be sunk to the still, several hundred feet above the mouth of the incline through which the mine has been principally worked. Calculations show that the ledge of the Timoko will be cut in the shaft at a depth of 300 ft. Besides this well-proved vein, the company owns a number of other veins in close proximity, which it is the design of the working shaft to open and explore. For nearly two years the Timoko Mine has produced bullion, and during the quarter ending with the last year the produce of ore was within a fraction of 333 tons, which yielded \$53,892, or the substantial average of \$162 per ton. By means of the working shaft the property of the company will be opened with system and economy, and its several veins thoroughly explored.

## FOREIGN MINING AND METALLURGY.

Some orders for merchants' iron to meet current wants have been received in Belgium. A few orders for rails both on home and foreign account have also been received in Belgium, but they are of secondary importance. The attention of Belgian industrials is much occupied by a considerable transaction in rails and railway plant, which is being negotiated at present in Russia. Tables showing the course of commercial affairs in Belgium in 1867 have just appeared. The exports of rough pig from Belgium amounted in 1867 to 11,066 tons, against 15,271 tons in 1866; the falling off arose more particularly in the deliveries made to Germany and France. The deliveries of minerals, which in 1866 were 157,695 tons, declined last year to 152,226 tons; the diminution arose in the exports made to Germany, the deliveries to France having, on the contrary, increased. The exports of rails from Belgium considerably increased in 1867, having risen last year to 80,875 tons (67,095 tons to Russia), as compared with 65,549 tons in 1866. The exports of plates from Belgium declined from 16,884 tons in 1866 to 12,683 tons last year, while the exports of rolled iron remained about stationary. Upon the whole, the total exports of Belgian metallurgical products presented a sensible increase as compared with 1866; thus, from 149,812 tons in 1865, and 175,279 tons in 1866, they rose to 182,653 tons in 1867. As regards the imports of siderurgical products into Belgium, they amounted last year to 56,233 tons, as compared with 32,508 tons in 1866; the augmentation arose under the head of the imports from England, which rose from 28,450 tons in 1866 to 56,233 tons in 1867. The minerals of the Zollverein enter Belgium in very considerable quantities; the Grand Duchy of Luxembourg furnishes the largest supplies, the receipts from that source having risen from 156,584 tons in 1866 to 213,040 tons in 1867. The increase in the exports of minerals generally last year was of no great importance, the total receipts for 1867 being 323,000 tons, against 307,900 tons in 1866. With the view of reduction of accidents arising from steam-boilers the school of engineers educated at the Liège School has just published a "Stokers' Code of Practice." The work is written in a simple but still able style, and promises to be useful and successful. The Paradis d'Avroy and Boerle Colliery Company, near Liège, will, on March 20, a dividend for the second half of 1867, or 16s. per share. Meetings are announced as follows:—Sacré Coeur Colliery Company, March 20, at the Bank of Antwerp; Levant d'Elouges Coal Mining Company, March 30, at Mons; Peronne Colliery Company, March 31, at Brussels; Vallée du Pléton Colliery Company, March 31, at Bonne-Echelle; Mines and Foundries Company, March 31, at Blankenberg-Steiberg (Aix-la-Chapelle); Paradis d'Avroy and Boerle Colliery Company, April 2, at Liège; Bonne Esperance and Battier Colliery Company, April 6, at Liège; Haine-Saint-Pierre Forges, Ironworks, and Foundries Company, April 11, at Brussels; and Saar-Longchamps and Boavay Collieries Company, April 30, at St. Vaast.

At Rotterdam, Drontheim copper has made 50 lbs. to 52 lbs. At Amsterdam, Drontheim has been quoted at 50 lbs.; English, at 45 lbs.; and Swedish, at 50 lbs. At Havre, Chilian in bars has brought 75.; Peruvian mineral (pure standard), 74.; United States (Baltimore), 80.; to 82.; ditto Lake Superior, 80.; to 97.; and Mexican and Plata in bars, 70. per ton. At Marseilles for consumption Toka has brought 74.; Spanish, 72.; refined Chilian and Peruvian, 80.; old red copper, 61.; and rolled red copper for sheathing, 84. per ton. At Paris tough English has brought 77. 10s.; Chilian in bars, 75.; to 78.; and Corocoro mineral, 75.; to 76. per ton. At Amsterdam, Banca has been quoted at 54. lbs.; and Billiton, at 63. lbs. At Amsterdam, Banca has made 73. 10s. to 54. lbs. At Paris, Banca has made 88. to 90. 10s.; Straits, 90. 10s.; and English, 94. per ton. At Havre, Banca has made 88. to 90. 10s.; Straits, 86. 10s.; and Peruvian, 82. to 84. At Marseilles, Banca has realised 96.; and English in sheets, 98. per ton. At Rotterdam the quotation for Stolberg lead has been 11. 10s. to 11. 12s., and German 11. 10s. to 11. 12s. At Paris, Spanish saumons have made 18. 10s.; French ditto, 19. 6s.; English, 19.; and German, 19. 6s. per ton. At Havre, Spanish has realised 18. 16s. to 19. 10s.; and lead from other sources, 18. 16s. per ton. At Marseilles lead in saumons, first fusion, has realised 18. 14s.; ditto second fusion, 18. 10s. per ton. Lead in shot for consumption has made 19. 8s.; and rolled and in pipes 21. 10s. per ton. At Paris rough Silesian zinc has been quoted 20. 16s.; zinc from other sources, 20. 4s.; and rolled Vieille-Montagne zinc, 26. per ton. At Havre, Silesian zinc has made 21. 12s. to 22. 10s. per ton. At Marseilles zinc in plates re-cast has brought 18. 16s., and rolled 28. per ton.

The aspect of the Prussian iron markets, with reference to rails, is considered to be improving, the administration of the Berg and Mark line having given out a commission for 5000 tons of puddled steel rails, at the rate of 11. 10s. per ton. The administration of the Hanoverian railways has ordered 11,000 tons of rails, the price named being 10. 10s. per ton; this order is stated to have been shared between Messrs. Jacob, Haniel, and Huyssen, of Gutheffnungshütte, near Sterkade, the Hörde Company, and the Phoenix Company, at Laar, near Rubrodt. The Cologne and Minden Company has ordered 8000 tons of rails from the Phoenix Works and Messrs. Jacob, Haniel, and Huyssen. Finally, the Berlin and Stettin Company requires 6000 tons of rails; it is not yet known, however, by whom this contract has been secured. These rail orders, which are not without importance, have tended to inspire new hopes, and to render the market a little firmer. The last few weeks have, however, witnessed no serious change in the Essen pig-iron market; grey pig, No. 1, is quoted at 31. 18s. 4d. to 37. 10s. per ton; ditto, No. 2, at 31. 18s. 6d. to 37. 16s. per ton; ditto, No. 3, for building purposes, 30. 8s. to 37. 11s. 6d. per ton. No improvement, either, can be reported in the markets for bar-iron in Prussia, the demand not being sufficient to maintain much activity; nevertheless, the large orders given out for rails are regarded as the forerunner of a revival in affairs. Rails for mines are quoted at 8. 10s. per ton, and rails already used at 4. 12s. 10d. per ton. Herr Krupp, of Essen, is extending his establishment, with a view to the production of plates for the construction of iron ships. The iron war ships owned by Prussia have hitherto, for the most part, been constructed in England, but Prussia hopes and expects to make them herself in future. A company formed for the construction of iron ships at Kiel is in full activity.

## [ADVERTISEMENTS.]

From Mr. EDWARD COOKE:—There has been a steady improvement in the Mining Market, as well as in that for other securities. The standard for tin ore has advanced to a small extent. This is the commencement, very probably, of a considerable further advance in the price of this article. The copper standard is also advancing. This, together with the return of confidence which is now gradually being restored, will have a very beneficial effect. It is to be hoped that ere long prosperity in the trade of the country will become general, when the holders of good mining property will participate in larger profits from its produce. At the GREAT WHEAL CHIVERTON meeting, on Wednesday, it was stated by the Chairman that the mines had paid dividends continuously for the past 8 years, and from the present prospects of the mines there is every probability of a continuance of dividends for many years to come. WEST CHIVERTON still holds its position as the best lead mine in England. What is highly important, and to be observed with regard to this property, is the fact of the deepest levels being the most productive. The various ends continue to open up large quantities of lead, and now that the outlay for new engines and other requisite plant, amounting to some 16,000*£*, has been disbursed, the dividends, it is expected, will be increased. NORTH WHEAL CHIVERTON has now arrived at a very interesting position. It may be remembered that the great outcrop in this mine has been the development of the lode below the 80. The lode in this level has been very large, and contained every indication of becoming productive of lead at a deeper level. This point has now been reached—the 90 fathom level—at the new shaft, and a cross-cut driven to cut the lode; and probably while I am writing the lode has been intersected. Of course, in mining there are great uncertainties, but, judging from the fact that in the 80 several winzes have been sunk and produced lead to the extent of 7 or 8 cwt. per fm., there is much to encourage the expectation that when the lode is cut through in the 90 and driven upon it will be found similar in character to some of the productive levels in the rich neighbouring mine, West Chiverton. I consider North Wheal Chiverton at the present time one of the most interesting young mines in Cornwall; and if the lode in the 90 proves a producer we for lead the shares will soon be double that of their present price. The engine at CHIVERTON VALLEY MINE will be set to work in a few days. This mine adjoins Chiverton Moor, and contains the lodes of this mine and also those of West Chiverton. The shares are held principally by the largest shareholders in that mine. I am informed that the capital is in hand (after paying for the engine and other plant, together with about 1200*£*, as premium to the owner of the land in lieu of dues, until some 15,000*£* worth of ore is sold) is 1200*£*. Seeing that the most productive lode in Chiverton Moor dips right into Chiverton Valley sett, the prospects of the latter mine are far above the ordinary character. Shares in demand at 4*£*, to 5*£*.

WEST GREAT WHEAL MINE is apparently neglected by the public, although there is every probability of its becoming one of the best mining properties in the Great Wheal Vor district. At the present low price of the shares, about 3*£* to 4*£*, there really appears to be little or no chance of loss. NEW WHEAL LOVELL lode, in the 40 east, continues rich; about 2 ft. of the lode taken to ascertain its value is stated to have produced 10*1/2* cwt. of tin. At that rate the lode may be valued at about 70*£* per fathom. In ordinary periods the shares would be selling at 2*£* or 3*£*. At the meeting of TRUMPET CONSOLS, to be held on the 9th (this day), a dividend of 7*£*. 6*£*. will, probably, be declared. This is one of the most legitimate dividend mines in Cornwall, and yet the shares have but seldom dealt in. It is pleasing to me to notice the continued prosperity of TINNOFF MINES. For permanency there is scarcely a better mining property to be found, and with an increased price of tin, which appears imminent, the profits of this fine property would be materially enhanced. The monthly sales of ore from the PRINCE OF WALES MINE reported 1097*£*, which, together with the carriage, amounts to 112*£*, leaving a profit of some 500*£* to 600*£*. Although the 6*£* has not yet proved rich, the shareholders should not be disheartened.

ened; already there are signs of ore coming in. The other parts of the mine are reported as good as ever. The advices by the West India Mail from CHONTALES are most encouraging, both as regards the present and the future. The cholera had disappeared, native labour returning, and one of the most important features in the advice is the completion of the tram-road from the Consuls to the San Domingo Mine, to where the mills are erected. About 110*£*, worth of gold was remitted. The next advices will, in all probability, be still more satisfactory. The shareholders may yet look forward with confidence to good results after all the sad disappointments, incidental to all companies of this character. From enquiries I have made as to the cause of the decline in the price of PESTABENA shares, I am enabled to state that it proceeds from some new shareholders being obliged to realise. The mines, as will have been seen in last Saturday's Journal, never looked more encouraging, and as the Spring advances, with favourable weather, the return of gold will be increased. I advise the shares being bought while they are at a discount. The prospects of the mines fully justify the shares being at a high premium.

From MESSRS. WARD and JACKMAN:—A large amount of business has been transacted in mining shares since our last, and the continued demand for which keeps up great activity in the market. We are assured by a correspondent, who, from practical experience, is a competent authority, that the mines mentioned below are showing decided symptoms of improvement, and, leaving the market price out of the question entirely, it will be found on reference to the reports from their respective managers, that such is the case. The mines alluded to are NORTH ROSKEAR, WEST FRANCS, CHIVERTON MOOR, CLIFORD, WHEAL GRENVILLE, PRINCE OF WALES, FRANCIS HENRIETTA, WEST SETON, and PRUDENCE; and local adventurers, known to these facts have been investigating, and will certainly enter the benefit of their outlay.—ST. JOHN DEL REY: Great interest is at present attached to anything bearing on the future of these mines, and we are pleased to hear that means have been suggested to the directors whereby, at a comparatively small outlay, and in far less time than was anticipated, operations of a remunerative character may again be resumed. As far as we are told, and his practical knowledge of such matters is unquestionable, that it is not impracticable to sink through the debris, and if so we need scarcely say a very ugly feature in the later reports will be removed. It is certain in the public are investing at present prices, and no wonder, when we consider the great fall these shares have experienced. The falling off in price of PRINCE OF WALES has caused a little alarm among some of the timid shareholders who, forgetful of the large quantity of ore already discovered in the levels above the 6*£*, have allowed themselves to be frightened out of their shares. The mine has been recently inspected by an experienced agent for a large shareholder, and we are convinced that if his report were made public it would be seen that in his opinion the shares are cheap at 4*£*.

## Projected New Companies.

Company.	Capital.	Shares.	Each.
North-West of England China Stone and Clay	£ 25,000	25,000	£ 1
Sao Vicente Mining	50,000	10,000	5
London Co-Operative Commissariat	10,000	10,000	1
Autotype Printing and Publishing	15,000	150	100
Castell Cidwan Slate Quarry	20,000	400	50
Marylebone Lodging House	3,000	1,000	3
London Lubricating Oil and Patent Paint	5,000	5,000	1
Desubriadora Mining	25,000	12,000	2
Boul'or Land	50,000	10,000	5
Denaby Main Colliery	110,400	1,840	60

SAO VICENTE MINING COMPANY, 50,000*£*, in 10,000 shares, of 5*£* each, with power to increase.—The objects are the purchasing, or taking up on lease, or by way of mining sett or licence, mines, quarries, and mineral lands in the empire of Brazil, &c.; and the working, leasing, mortgaging, and selling of such mines, works, &c., and the ores and minerals thereof, and the smelting, or otherwise rendering merchantable any ores, &c., to be obtained, and the manufacturing of products therefrom, whether belonging to the company or not, and the making railways, roads, or other approaches to the said mines, and other works, and doing such other things, &c.—The Memorandum is signed by HENRY HAYMEN, 12, Clarence-road, Kensington, 49; ROSS DONNELLY MANGLES, Stoke Park, Surrey, 49; DAVID DOWNING, 36, Gloucester-terrace, major-general, 40; ROBERT HESKETH, 22, Carlton-crescent, Southampton, 40; EDMUND K. BLYTHE, 10, St. Swithin's-lane, solicitor, 10; SAMSON LLOYD FOSTER, Old Park Hall, Walsall, gentleman, 40; WILLIAM FLETCHER, Jun., 45, West-street, Gravesend, shipowner, 10. The number of the directors of the company, including the Chairman, shall not be more than six nor less than three, and the qualification of a director shall be 40 shares, registered in his own name solely. First directors, MR. HENRY HAYMEN, MR. ROSS DONNELLY MANGLES, MR. ROBERT HESKETH, MR. SAMSON LLOYD FOSTER, and Major-General DAVID DOWNING. The said HENRY HAYMEN shall be the Chairman till the year 1879; and thereafter, or in the case of his death or retirement, the Chairman shall be elected by the directors. Until a director is elected at the rate of 25 per cent. per annum, shall have been paid upon the capital of the company for the remuneration of the Chairman, and thereafter, or in the case of his death or retirement, the remuneration of the Chairman shall be 25*£* per annum, and 2*£*. 2*£*. per board meeting, and of each of the other directors the sum of 5*£* per annum, and 2*£*. 2*£*. per board meeting, but so that the total remuneration of the Chairman and directors shall not exceed in any year the sum of 100*£*. Provided, nevertheless, that when and so long as a dividend at the aforesaid rate of 25 per cent. shall be paid, such remuneration of the Chairman and directors shall be doubled; and when and so long as a dividend at the rate of 50 per cent. per annum shall be paid, such remuneration shall be three times the first-named amounts.

DESCUBRIADORA MINING COMPANY, 25,000*£*, in 12,500 shares, of 2*£* each, with power to increase.—The objects are the acquisition, from JOHN POTT, of Mexico, and all other necessary parties, of the Desubriadora Mine, with its appurtenances, situate in Queretaro, in Mexico, and of all rights, &c., belonging thereto. The working and developing of any land or mineral property, rights, concessions, or privileges in Mexico, which, at a general meeting, the company shall, by special resolution, determine to purchase; the preparation and sale, or other disposal, of the products of any properties acquired by the company; the grinding, dressing, and preparation of ore; and the doing, &c. The Memorandum is signed by J. R. DANIEL, Camborne, solicitor, 150; W. PIKE, Camborne, gentleman, 150; R. H. PIKE, Penzance, gentleman, 150; W. H. BAYLEY, 32, Norfolk-terrace, Bayswater, gentleman, 250; J. R. BOTTRALL, Camborne, accountant, 5; H. V. NEWTON, Camborne, stationer, 10; W. H. BAYLEY, 25, Cambridge-square, gentleman, 200. The number of the directors may be varied, from time to time, by a general meeting; in the meantime the number of directors shall be five. Qualification, 100 shares; WILLIAM H. BAYLEY, JOHN R. DANIEL, R. H. BAYLEY, WALTER PIKE, and ALFRED F. FENISON POLLARD shall be the first directors of the company. The directors, including the managing director, (if any) shall be entitled to receive for their remuneration in every year in which a dividend of not less than 5*£* per cent. shall be declared, the said annual sum of 600*£* shall be paid as from the incorporation of the company, so soon as an average dividend of 5 per cent. from that date shall have been paid, and the directors shall divide the gross amount of their said remuneration amongst themselves in such manner as they or the majority of them may agree upon. The directors may, from time to time, borrow on behalf of the company, and in the name and for the purposes of the company any sum not exceeding in the whole 10,000*£*, and also any monies which any general meeting shall authorise to be borrowed in such mode, and upon such terms, either as to time of repayment, rate of interest, nature or mode of security, or otherwise, as the directors shall think fit or expedient.

CASTEL CIDW MSLATE QUARRY COMPANY, 20,000*£*, in 400 shares, of 5*£* each.—The objects for which this company is established are the acquisition of certain mineral rights in certain lands in Llamborda, in Carnarvon; and all the works belonging thereto, and also therein, to search for, raise, and slate, lead, coal, or copper (if any), and generally to carry on mining and quarrying operations, and matters incident thereto, &c., whether by formation of a separate company, or the creation of new shares, or in any other way, whether similar or not; and also for the working of such mines, quarries, pits, or any other works, and preparing smelting, and making merchantable slate, on minerals, and earths, to be obtained from such mines, quarries, pits, and other works; and also for the acquisition of any wharves, warehouses, &c., &c. The objects for the purpose of storing the slate, and generally for doing, &c. The Memorandum is signed by WILLIAM LIPSCOMB, Dursbury, land agent, 10; J. E. WALKHOUSE, Halifax, 22; JOHN R. INGRAM, Halifax, solicitor, 24; SAMUEL WATERHOUSE, Esq., Halifax, 28; and NEW-SQUARE, Lincoln's Inn, solicitor, 30; shares. There shall be five directors, thus: PHILIP WILLIAMS, of New Exeter, Devon, clerk; ALFRED MARKBY, of Wimbleton, Surrey, solicitor; J. R. INGRAM, of 6, Silver-torace, Halifax, York, solicitor; JAMES STANSFORD, of Moorside, near Halifax, York, county court judge; and W. H. LIPSCOMB, of Llamborda, Thornhill, near Dursbury, York, land agent, shall be the first directors of the company. The qualification of the first directors above named, and every subsequent director, shall be the holding of ten shares in the company. There shall be a managing director appointed by the board, who shall be entitled to be paid such salary as the board may determine. None but the managing director shall be entitled to be paid any remuneration for service done in connection with the said company, but the directors shall be paid all travelling expenses to see the working operations of the quarries, mines, and premises, when a journey for that purpose shall be deemed expedient and necessary to the majority of them. The consideration to be paid to the lessor for granting the lease of the works, and mines on part of Planwydd and Cwmbachan farms, in the parish of Llanon, in the county of Carnarvon, to be 600*£*, whereof the sum of 500*£*, is to be represented by 100 shares of 5*£* each, fully paid

## Mining Correspondence.

## BRITISH MINES.

**BEDOL-AUR.**—H. R. Harvey, March 18: Jones's pitch, in back of the 70, south of shaft, is looking much better, yielding fully 15 cwt. of lead ore per fathom. Leigh's pitch, in the 70 north, is yielding about 7 cwt. of ore per fm. Oare's pitch, in the bottom of the 70, south of shaft, is yielding some nice lumps of lead. Other parts of the mine are without alteration.

**BLACK CRAIG.**—J. Smitham, March 19: Harriet's cross-cut, at the 63, is driven north from the south side of the plat 2 fms. 2 feet. The ground in the cross-cut is still very hard for driving in, but I am in hope it will improve as we get forth. There is no improvement yet in the cross-cut driving south of the 54 south; there is no appearance of the regular south wall of the lode yet. The stope in the back of the 54, west of Harriet's cross-cut; are producing about 3 tons of lead per fathom for the breadth of the stope (between 2 and 3 fathoms). The stope in the back of the 54, east of No. 2 cross-cut, are producing at present about 10 cwt. of lead per fathom. The winze sinking in the bottom of the 43, on the east end of the stope below, is producing some good saving work for lead but the best part of the lode below for lead is to the north of this winze. I think we have from 6 to 9 ft. more to sink to hole to the stope below. We have not weighed any lead into the house this week, but I think we have about 6 or 7 tons on the floors in course of dressing, that we shall get into the house in two or three days. We put 11 tons 18 cwt. of blende into the railway-trucks yesterday, which I expect left Palgrave station last night by the last luggage train for Carlisle. The blende is 21 cwt. to the ton, dry weight.

**BOTTLE HILL.**—J. Eddy, March 19: I have not found any alteration in the main lode. I may just say that the lode is still large and thin in both the 12 and 24. We have now four men in each level working on tribute at 15s. in 12, the tributaries paying all cost. On the south lode our working has been more satisfactory. The lode in the 12 west has not only improved in appearance, but but in quality. The lode in the present end is still 3 ft. wide, and worth for tin from 16s. to 12s. per fm.; now driving at 4f. per fm. We have still four men driving and stoking on tribute east of shaft, in the same level, at 15s. in 17. tribute; here the lode appears to be making larger, and is now producing more tin than usual. I would strongly recommend a further trial of this lode both east and west of this shaft in the 12—say, drive for two or three months by four men in each level. The nature and quality of the lode now showing in the ends leads me to believe that the doing the work recommended would not be at a loss to the company, as the lode in the ends will more than pay the cost for driving, and at the same time in driving we should be laying open backs that might be stopped and taken away at a good profit—that is, if the lode continues good in length and depth, as we now have it in the present ends of ground. The work recommended ought to be carried out, as there are good chances of success; and, before this is done, in my opinion, this lode will not have had a fair trial. I hope to go to Truro on Saturday next to see the weight of out parcel of tin, which I believe will be about 4 tons. In addition to this, we have about 3/4 tons broken underground and now in course of dressing.

**BONFLOYD UNITED.**—T. Kemp, March 18: The shaftmen at the new shaft are getting on well in fixing rods, pumps, &c.; this work will be completed by the end of this week, and I hope to cut the lode by the shaft in about three weeks' time. The lode to the west of the cross-cut, in the 63, is worth 35 cwt. of lead ore per cubic fathom. In the 62 fm. level end, east of Barton's cross-cut, the lode is composed of blende, intermixed with carbonate of lime. The stope under the 62 is worth 35 cwt. of ore per cubic fathom. The stope to the east and west of winze, above the back of this same level, are producing on an average 20 cwt. of ore per cubic fathom. We shall sample on Saturday next 70 tons of lead ore.

**BYRN GWIOG.**—S. Harper, March 19: The lode in the winze sinking below the 102, east of engine-shaft, is about 2 ft. wide, composed of fluor-spars, blende, intermixed with shale, and lead ore, saving work. The lode in the 85, west of No. 3 winze, is still small and poor, but from the appearance of the lode in Bramwell's shaft, which is good, and the dip of the run of ore, we may reasonably expect to meet with a good lode in this level soon. William's pitch, in the back of this level, east of No. 3 winze, is worth 2 tons per fathom; and the pitches both in the back and bottom of this level are without any remarkable alteration since my last report. Bramwell's shaft, sinking below the 75, is improved since my last; the lode now about 2 ft. wide, worth about 2 tons per fathom, that is, a very promising looking lode. The lode in the 75, west of Bramwell's shaft, is looking a shade better, and from the appearance of the ground I think the lode will further improve soon; the pitch in the back of this level is still worth 2 tons per fathom. We have set two pitches in the back of the 66 in the old workings, and am glad to say that we have a good lode in one, and a very promising lode in the other; it will require some little time before we can properly work this part of the mine, been so much filled up with old stuff, but so fast as we can clear out the old stuff, so that the men can go at their work as fast as we can set the old ground on tribute. The lode in the 66, east of the engine-shaft, is also looking a shade better, still producing nice lumps of lead ore. Having communicated a cross-cut from an intermediate level at the 66, west from the engine-shaft, on Brooke's old run, and which has been suspended for some time for want of proper ventilation, we shall now as soon as possible commence the driving on the old run of lead, and hope to be successful in meeting with the lode of lead as formerly.

**BWADRAIN CONSOLS.**—R. Northey, March 17: The lode in the 10 is 5 feet wide, and worth 1 1/4 ton of ore per fathom. There is no change to report in the 25 fm. level, the men having only been employed opening cuttings for the new line of rods and sheaves. The 35 is still in the disturbed measure of ground. The lode in the 45 is still large; at this time not much has been done, as the men are put to raise the back for ventilation. All the stope throughout the mine are producing their usual quantities of ore. We are going on as fast as possible with our crushing and dressing, and if this showery weather continues, we hope to sample in about four weeks from us to 50 tons of ore. We have purchased about 300 tons of strong iron rods, with pulleys, &c.; we are now removing the same to be fixed for use as soon as possible.

**BWLCH CONSOLS.**—R. Northey, March 16: The lode in the 29 is 2 1/2 ft. wide, and worth 1 ton of ore per fathom. The three stope in the back of this level are worth on an average 1 1/4 ton per fathom. The lode in the 49 is 2 ft. wide, and worth 16 cwt. per fathom. The stope in the back of the 40 will yield quite as much ore as last reported. The lode in the 50 is 4 ft. wide, and worth 2 tons per fathom. The lode in the 60 is 3 ft. wide, and worth 5 cwt. per fathom; this end is improving as it approaches the ore ground opened up eastward by the levels above. The 70, east from the bottom of Ritchie's shaft, is looking very promising, and opening out tribute ground. The mine never looked better than at present. We sampled to-day 50 tons of the usual quality ore.

**CAPE CORNWALL.**—R. Pryor, F. Hosking, March 17: The lode in the 100, east of engine-shaft, is producing good stones of tin, we have to drive this end 2 fms. further to come under the winze sinking below the 90, after which we would strongly recommend the driving of a cross-cut north to cut the other lodes; this is a great and important point. The lode in the winze sinking below the 90, is producing saving work for tin. The lode in the 70, west of shaft, is full 4 ft. wide, producing low quality tin-stuff, with stones of copper ore, a kindly lode.

**CARADON CONSOLS.**—S. Bennetts, March 17: There is but little change to notice in the 78 west during the past week, nor in the winze below the 68 fathom. The lode in the 45 is still large; at this time not much has been done, as the men are put to raise the back for ventilation. All the stope throughout the mine are producing their usual quantities of ore. We are going on as fast as possible with our crushing and dressing, and if this showery weather continues, we hope to sample in about four weeks from us to 50 tons of ore. We have purchased about 300 tons of strong iron rods, with pulleys, &c.; we are now removing the same to be fixed for use as soon as possible.

**CARNARVONSHIRE CONSOLIDATED.**—John Kitto, March 19: The lode in the ends driving both east and west, in the 20, at Codd Mawr Pool, is yielding some good ore in detached lumps, which undoubtedly indicates their near approach to a bunch, and we may expect in these ends a speedy improvement. The end driving south, on the new lode, in the same level, has already improved, and is now producing good saving work for lead. The tributaries on the lode parallel to the main lode are raising a fair quantity of ore, and making wages. At Pencraig we have not taken down any lode in the shaft for the last two fathoms sunk, but this I have ordered to be taken down at once, and from which we may reasonably expect a good quantity of ore, as, when we left off carrying the lode in the sinking it was worth 2 tons per fathom, with every prospect of further improvement. The deep adit level is now in (under cover) about 60 yards, and is being driven at the rate of from 10 to 12 yards per month. There is now about 50 yards of cover over the forebreast, and a lode intersected at this depth, and which we anticipate doing shortly, which must be regarded as being of the utmost importance to the undertaking, and will add very materially to its present prospects and value. We have now about 12 tons of ore on the mine, which quantity will be pretty rapidly increased by the produce of Pencraig shaft and from the other parts of the old mine.

**CEFN BRWYNO.**—James Paul, March 17: Saturday last being our setting-day, the following bargains were set:—The 92 to drive east of Taylor's shaft, by six men, at 6s. 7s. 6d. per fathom; the lode here is 3 foot wide, worth 1 ton of lead ore per fathom. The same level, west of shaft, is set to four men, at 6s. per fathom; the lode is of a promising character, and producing good stones of lead ore, with every indication for an improvement. The 80 to drive east of Taylor's shaft, by four men, at 6s. 7s. 6d. per fathom; the lode here is of a very promising appearance, being 4 feet 6 inches wide, and worth 16 cwt. of lead ore per fathom. This point is steadily improving, which looks well for the promising ground eastward. The 80 west is set to two men, at 5s. 15s. per fathom; the lode here is very large, and the part which the level is being extended upon is yielding at times good stones of lead ore. The cross-cut north, in the 20, is set to four men, at 5s. per fathom, and is being urged forward as fast as possible. We hope to be able to start the 56, in the deep adit level, to drive east, in about a fortnight hence. The machinery, &c., on the mine is in good working order.

**CHANTICLEER.**—W. Wasley, March 19: The ground in the 110 yard level, driving west of shaft, has got easier for driving since my last report; the lode is also looking a little more promising, and is producing some fine lumps of ore. **COLQUITTE AND CALLINGTON.**—Thomas Dodge, March 18: The lode in the Colquitt shaft is split in two parts—the eastern part is about 3 feet wide, producing mundic and silver-lead; the western part is above 18 inches wide, producing mundic and lead; this is a very promising part. We have cut water in the Colquitt shaft, which will retard our speed in sinking. In the 20, going towards Colquitt, the men are cutting through the lode at present, of which I will write you in a day or two.

**CWM ERFIN.**—March 17: During the past week we have broken some very good work on a branch taking off north in the stop between the deep adit and the 10; we expect this will hold back as far as the cross-course, which is 6 1/2 fms., if so it will give us a good many tons of ore. The lode in the deep adit level has varied since the last report, at times of a loose and hollow or roughy nature, and much water issuing from it. The lode in the present end is 2 ft. wide, composed of clay-slates, veins of quartz, and spots of mundic. The lode in the stop over the back of this level, 65 fms. east of boundary, has improved, and will now yield 2 tons of lead ore per fathom. The lode in the stop in back of ditto, 35 fms. east of boundary, will produce 1 1/2 ton per fathom. We have four other stope working in the back of ditto, yielding on an average 3/4 ton per fathom. The lode at Taylor's drift, east of boundary, is 20 in. wide, composed of kilas, branches of quartz, and spots of mundic; this level appears to be passing through a similar channel of ground as that of the level below. The lode in the same level, west of Robert's winze, is 4 ft. wide, containing kilas, decomposed quartz, and lead ore, and will turn out 15 cwt. of the latter per fm. The lode in the stope over the back of this level, 18 fathoms east of Robert's winze, is 3 yards wide, worth 2 tons of lead ore per fm. We have four other stope working in back of the same level, yielding on an average from 15 cwt. to 1 ton of lead ore per fm. There is no improvement in the rise over the back of Williams's level, east of the boundary, and it is for the present abandoned. All the other parts of the mine are without any alteration to remark. We shall sample on Tuesday next the usual quantity of ore.

**EAST CARN BREA.**—Isaac Richards, March 16: The lode in Thomas's engine-shaft is 1 1/2 foot wide, composed of quartz, capel, fluor, mundic, and good stones of copper ore. Thomas's Engine-shaft, No. 3 Lode: In the 80 east, the lode is 15 in. wide, consisting of quartz, mundic, and a little copper ore. The lode in the 80 west is 5 ft. wide, consisting of capel, quartz, fluor, mundic, and copper ore, worth 1 1/2 ton per fathom. In Davie's cross-cut, south, at the 80 west, a lode has been met with, and cut through; it is 1 1/2 ft. wide, composed principally of capel, with a little mundic and copper ore; this cross-cut is being continued for the intersection of the other lodes still to the south of this point. The lode in the 50 east, and east of William's cross-cut, is 1 foot wide, and worth 1 1/2 ton of copper ore per fathom. A rise (Tonkin's) is being put up in the back of the 50, east of William's cross-cut, the lode in which is 1 ft. wide, consisting of capel, quartz, and copper ore, worth 1 1/2 ton per fathom. The lode in the 50 west is 1 1/2 ft. wide, consisting of quartz, capel, fluor, and copper ore—saving work. The lode in the 40 west is 1 ft. wide, and worth 1 1/2 ton of copper ore per fathom. Buckley's Shaft, No. 6 Lode: The lode in the 50 west is 1 foot wide, and consists of capel, quartz, and a small portion of copper ore. The lode in the 40 fm. level west is small and poor.

**EAST GUNNISLAKE.**—James Bray, March 19: The lode in the winze sinking under the 46 is 5 ft. wide, producing good stones of ore. The stope in the bottom of the 46 continues to produce 2 tons of ore per fathom. There is no change in the 36 fathoms level cross-cut south. The lode in the shallow adit is still very large, carrying strings of ore throughout. This point looks very kindly for early improvement.—Impham Lodge: The lode in the present end is not looking so well, now worth 1 ton of ore per fathom.

**EAST GUNNISLAKE AND SOUTH BEDFORD.**—J. Bray, March 13: We have completed the incline, and are now in a position to haul any quantity of stuff, the produce of any workings under the 36. Since I sent you the report for the meeting the lode in the 54 has not looked quite so well for ore; and seeing that the end costs us in hauling charges, trammimg, &c., something like 9s. per month, I have (after conferring with Mr. Dennis on the matter) stopped this point, and now purpose working the piece of ground, between the 54 fathom level end and the 46, from the 46 itself; by so doing, we shall be able to haul the stuff over the incline by means of the water-wheel instead of by manual labour, as heretofore at Gard's shaft. They are through the cross-course at Impham, and I am glad to say that the part of the lode seen is worth 3 tons of good ore per fathom. No other change to advise you of.

**EAST SNAEFEL.**—W. H. Rowe, March 17: The engine-shaft is sunk 5 fms. 4 ft. below the 15 fm. level. The ore part of the lode is now gradually leaving the shaft, and underlying slowly westward. As we shall not sink over 2 fms. more perpendicularly, I have arranged with the men not to lose hold of the part of the lode referred to, as it would have to be taken down at some time; but, considering the increased width, &c., I have allowed them 20s. per fathom for this month. The quartz is getting a little firmer, and well mixed with lead, worth, I think, 1 ton per fathom of the shaft; but the washing-floors will soon assist any calculation of this sort. As soon as possible I propose to drive out a 20 fm. level a limited distance northwards, as there is some very good ore going in that direction, and where, as I have stated before, a richer body of ore ground that we have yet seen very probably exists. The sump in the 15 south is set at 8s. per fathom, but the lode is not of much value as yet. The ore further south will, I expect, dip underneath the present close bed of ridges. One part of the stopes continues to yield some very good ore—certainly too good to leave as yet.

**EAST WHEAL GREENVILLE.**—G. R. Odgers, W. Bonnetts, March 14: Since our advise of Wednesday the men have been principally engaged at capstan sending down the plunger-lift, and hence we have no change in the lode.

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**shaft, in a good lode of lead.** We have several pairs of tributaries already at work, who have broken and drawn to surface some splendid piles of silver-lead, and as soon as we have cleared the timber, iron, &c., from the different levels left by the old party we shall be able to set a great many more tribute pitches in profitable ground, and shall soon be in a position to make regular two-monthly returns of silver-lead. No time will be lost in reaching the bottom of the mine, and, when attained and put in working order, we have no hesitation in saying that we shall be at once self-supporting, which will result in opening up a valuable and lasting property.

**PENHALLE WHEAL VOR.**—Wm. H. Martin, March 18: In sinking below the 74, at Hollingsworth's shaft, we continue to have good speed. By the latter part of next week I expect we shall have the rise in back of the 38 west. Hollingsworth's shaftmen are engaged driving the 60 west, or 1 north lode, which is 9 in. wide, composed of mudiic, blende, and peach, and will produce stones of tin. In this level we have put an air-machine and pipes; the old ones which we found left there will not do for use again. We are progressing very well in clearing the bottoms in the 50 west; the parts cleared yield tin, which we can take away at a profit. Some of our men are getting good wages on tribute. I purpose selling 4 tons of tin on Saturday ext.

**PRINCE OF WALES.**—J. Gifford, March 19: In the 65 east the lode is 2 feet wide, composed principally of capel and quartz, with occasional stones of mudiic and copper ore intermixed, but as yet of no value. In the 55 east we shall begin taking out the lode in the early part of next week. In the 55 west the lode is 5 ft. wide, worth 34*l.* per fm. Three stope in the back of the 65 are worth on an average 23*l.* per fm. each. The winze in the 45 west is worth 2*l.* per fm. The winze in the 45 east is worth full 30*l.* per fm. In the 45 fathom level east we are driving by the side of the lode. We are getting on well with our sampling.

**PRINCESS OF WALES.**—G. Rickard, March 19: The driving of the north adit level towards Prince of Wales main lode is urged on with all possible speed by a full pair of men; the ground therein is favourable for exploring, and highly mineralised; present price for driving 4*l.* per fm. per fathom. There is no other change worthy of remark since last reported on.

**PROSPER UNITED.**—J. Nicholls, J. Hall, W. Gianville, March 18: The lode in the 100 east is looking a little better, now worth 10*l.* per fm. for tin and copper. The lode in the 100 west is unproductive. The stope in the back of the 100 is worth 10*l.* per fm. for tin. The 90 rise is producing saving work for copper and tin. The 90 stope are worth 10*l.* per fm. The 80 west is worth 6*l.* per fm. for copper and tin. The 80 stope are worth 6*l.* per fm. The 70 east is producing occasional stones of ore. The 60 stope are worth 5*l.* per fm. The 50 west is worth 6*l.* per fm. for tin. The 50 east is producing 1 ton of ore per fm. The 50 stope are worth 6*l.* per fm. The 40 west is producing saving work for copper and tin. The stope in the back of this lode are worth 5*l.* per fm. The 25 west is producing saving work for copper. The 25 east is producing stones of ore. The stope in the back of the 25 are worth 4*l.* per fathom. The ground in the 50 cross-cut south is easier for driving, and from its appearance we expect to cut Moor lode shortly. No change to remark in any other part of the mine.

**ROARING WATER.**—H. Thomas, March 17: There is a decided change in the character of the rock in Gilmair's engine-shaft. A branch, about 1 foot wide, composed of quartz, carbonate of lime, mudiic, and spotted with yellow copper ore, has come in the shaft from the south-west, which appears very like a limb or offshoot from Smith's lode.

**ROSE AND CHIVERTON.**—J. Evans, March 18: In driving on the caunter lode we intersected another north and south lode, which is only 4 fathoms from No. 2 parallel lode. We have opened 15 fms. on this new lode; it is from 2 to 3 ft. wide, with a strong gossan. I consider this greatly enhances the value of this property, as we have now three parallel lodes to the rich old East Wheal Rose lodes, and the three parallel lodes show even stronger evidence of greater richness in depth than Middleton's or east lodes did, and one shaft will command all three of these parallel lodes.

**ROSEWARNE CONSOLS.**—J. Nancarrow, R. Knuckey, March 14: At our survey to-day the following bargains were set:—The 80 to drive south by six men at 5*l.* per fathom; here we expect to shortly lay open the caunter. The 70 to drive south, east on the caunter, by three men and three boys, at 4*l.* per fm. per fathom; here we have a very good-looking lode, worth 4*l.* per fathom, and improving as we drive. Sarah's shaft to sink below the 30, by six men, at 3*l.* per fathom; lode improving and getting into ore. The 20 to drive west by four men, at 2*l.* per fathom; lode looking promising, and containing a little ore. We have also set four pitches, at an average tribute of 14*l.* 2*d.* in 1*l.* The water is abating, and we expect soon to be able to work the ore ground on the caunter below the 50 fathom level.

**ROSECLIFF AND TOLCARNE.**—R. Pryor, T. Gundry, March 11: We set the following bargains on Friday last:—The 50, to drive east of cross-cut, on No. 3 lode, by six men, at 3*l.* per fathom. We are still in a part of the great flookan; but, judging from the character of the ground, and the water issuing therefrom, we think that we are near the lode. To rise in back of this level, east of cross-cut, by two men, at 1*l.* 10*s.* per fathom; the lode is 3 ft. wide, composed of mudiic, friable spar, flookan, and lead, worth of the latter about 1*cwt.* per fathom—very kindly lode, and promising for further development. The winze to sink below the 30, on No. 4 lode, west of cross-cut, by four men, at 4*l.* 15*s.* per fathom, in a lode 1*1/2* ft. wide, composed of mudiic, spar, blende, and stones of lead, with a good appearance.

**SORTRIDGE CONSOLS.**—James Richards, March 19: Hitchins's engine-shaft is in regular course of sinking to the south of the lode, and down 4 fathoms below the 140, in favourable ground for progress. In the 140 east the lode is 2 feet wide, and good stones of ore are being obtained therefrom.

**SOUTH CONDURROW.**—J. Vivian and Son, W. Williams, March 14: In King's shaft, now down 9 ft. below the 82, the north part of the lode is without alteration since the last report, and the south or main part of the lode has not yet been struck. In the 82, east and west of King's shaft, there is no alteration worthy of notice since last report, and the same remark applies to the 71 east. In the 71 west, in driving south we have reached the north wall of the lode, and in our next report shall be able to give some account of the lode. In the 61, north and west, we have nothing new to remark on. In the 51, east of Old Tye shaft, we have experienced great difficulty in getting forward, in consequence of the ground through which we are passing being so completely decomposed and saturated with water, and we think we shall be obliged to drive south to get into another country. In the 51, west of Vivian's shaft, the lode continues of good size, favourable character, and productive of lumps of good copper ore. There is no alteration in the value of the 51 stope.

**SOUTH DARRON.**—J. Boulby, Wm. H. Boulby, March 14: The lode in the 70 west is 2 feet wide, containing a little copper and lead ore, and looking exceedingly promising for improvement. The lode in the 60 west is 3 ft. wide, and has a very kindly appearance; current value for lead and copper ore 2*l* per fathom. The lode in the 50 west is small, containing spots of lead, but not to value. The stope throughout the mine continue to yield their usual quantity of ore. There is no change to notice in any other part of the mine. We sampled yesterday (Friday) 30 tons of silver-lead ore.

**SOUTH HERODSFOOT.**—Wm. Goldsworthy, March 19: The ground in the engine-shaft still continues favourable for sinking. The engine and pitwork are in good order, and working well.

**ST. JUST AMALGAMATED.**—R. Pryor, R. Warne, Wm. White, March 17: Western Mine: The lode in Savelle's engine-shaft, sinking below the 100, is worth 12*l.* per fathom, and the shaftmen are making good progress in cutting the plat. The lode in the 100, east of Savelle's shaft, is improving, worth 8*l.* per fm. The lode in the 90, east of Savelle's shaft, is worth 5*l.* per fathom. The lode in the 90, west of Savelle's shaft, is improving in its appearance and character. The lode in the 75, west of Savelle's shaft, is worth 7*l.* per fathom; and the lode in the winze sinking below the 62, west of shaft, is worth 7*l.* per fathom. The lode in the 20, north of Reddipper shaft, is worth 5*l.* per fathom. The lode in the 10, north of Reddipper shaft, is worth 9*l.* per fathom; and the lode in the 20, south of Savelle's shaft, is worth 4*l.* per fathom. All other places continue just the same as when last reported.

**SOUTH WHEAL GRENVILLE.**—G. R. Odgers, W. Bennetts, March 14: The lode in the engine-shaft, sinking below the 30, is 16*l.* in. wide, composed of quartz, &c. We have opened on a strong lode both at the 20 and 30 fm. levels, which we believe indicates a productive lode in depth. We will send you a detailed report for the meeting on Tuesday.

**SUMMER HILL.**—Wm. Wasley, March 19: We continue to make good progress with the cross-cut out from the ore course, but have not yet cut anything of importance; the ground, however, is looking a little kindlier than it was. We are getting on well with the driving of the south-west level on the ore course; the plat in the end has improved a little, and is producing some nice lumps of ore, but not of much value. No other change.

**TAMAR VALLEY.**—J. Goldsworthy, March 19: In the 20, driving south of shaft, the driving is being continued by the side of the lode; therefore no change since last reported upon. The stratum by the side has become easier, and better progress is being made. The ground is highly mineralised. In the 10, driving south, the lode is 2 feet wide, composed of fluor-spar, quartz, prian, mudiic, and silver-lead ore—a strong, healthy lode. An improvement is anticipated here. The clearing of the adit on the old part of the mine is progressing satisfactorily. Our surface operations are being pushed on with all speed.

**VIGRA AND CLOGAU.**—W. J. Holman, March 19: The lode in the eastern stope from No. 4 shaft, under No. 2 adit east in No. 2 mine, is 3 ft. wide, and looks well. The lode in the western stope, from same shaft, is 7 ft. wide, and good stumps' work is being broken from both places. The incline shaft to the bottom of No. 4 is pushed forward, and will be soon completed for hauling. In the bottom of No. 5 shaft, under the adit west, the lode is 4 ft. wide, and very finely mineralised. The cross-cut south from No. 1 level is being driven forward in clay-slate, without change. The driving east from No. 2 shaft is still in clay-slate, but no visible gold has yet been seen in this place. At the Old Copper Mine the water will be cleared out by the end of the week, when we shall commence working in the bottom of the mine. The small branch of quartz has disappeared from Jenny's adit, Vigras' mine; the adit is still in clay-slate. The reduction and other works are going on as usual.

**WEST CHIVERTON (Special Report).**—March 19: In accordance with your instructions, I carefully inspected West Chiverton Mine yesterday, and I beg to hand you the following account report:—Hawke's engine-shaft is sunk to the 120, where they have commenced to cross-cut towards the lode, and which they will do as expeditiously as possible. The 110 is extended east from the engine-shaft 20 fms., on a good lode for lead, and worth from 30*l.* to 40*l.* per fm. in the present end they are cross-cutting through it; now 9 ft. wide, without any south wall, which is worth nearly 4 tons of lead, or (say) 60*l.* per fathom—a good lode. This level is extended west from the shaft altogether 37 fms., which has been on the south part; we are cross-cutting through the lode at intervals. On the south part, or Valpy's, they have had a good bunch of lead to within some 3 or 4 fms. of the present end, which has varied from 2*l* to 3 tons of lead per fathom. At 5 fms. behind the end, or 32 fms. from the shaft, they are now engaged cross-cutting through the lode; they are in 9 ft., which I estimate at 5 tons, or 75*l.* per fathom; at this level the lode has been cross-cut in several places, which I estimate as being worth on an average (say) 80*l.* to 85*l.* per fathom. The 100, east of Hawke's shaft, is suspended; but in the back of this level there are two stope working, where they have a good bunch of lead, worth fully 70*l.* per fm. each. This level is extended as far west as 25 fms. beyond Burges's shaft. For 50 fms. west from Hawke's shaft the whole of the lode has been stripped down, where it is 18 feet wide, and, I believe, to be worth from 70*l.* to 80*l.* per fathom. Between this place and Burges's shaft the level has been continued on the south part of the lode. Burges's shaft is sunk to the 100, which they are now engaged stripping down and preparing for a skip-road. At this point the lode is cut through from north to south, and in the latter place there is a splendid bunch of lead. I estimate the lode at this point to be worth 60*l.* per fathom; and, seeing the bunch of lead which they have now discovered 12 fms. west from No. 1 winze, or 25 fms. west from Burges's shaft, on the south part, which will produce fully

5 tons of lead to the fathom, I say any person would calculate upon opening a valuable piece of ground here. The ground to the west of Burges's shaft is all standing, but we have three stope working in the back of this level between Hawke's and Burges's shafts. At this level they have opened on a good lead lode for at least 110 fms. long, and, after looking at the bunch of lead gone below the 90, I am of the opinion that they will continue to open out good ground here for some time yet to come. I could not examine either the No. 2 or No. 3 winzes below the 90 before this end. The 90 is extended west from Batter's shaft, on the south part of the lode, about 50 fms.; the lode being 2 ft. wide, and producing lead and jack—tribute ground. In the present end they are engaged cross-cutting north, but as yet they have not met with anything to notice. I should most certainly recommend this end being continued, as I think the probabilities are very much in favour of meeting with a good improvement. At 16 fms. behind this end the lode was cut through, where it is worth from 30*l.* to 40*l.* per fathom, which continued as far east as the cross-cut to the north lode, on which the winze is sunk from the 80 fm. level. This level again driven west, on the north end of the winze, 8 fm., which opened out a piece of ground worth from 20*l.* to 25*l.* per fathom. About 6 fms. west from Batter's shaft they have driven west on the north lode, where the lode is disordered by a cross branch, the stope being in this end is north for lead and jack 2*l* per fathom. The 90 is extended west on the north part of the lode from the point of horse (which is 20 fms. west from Burges's shaft) 40 fathoms. For 37 fms. the lode was worth from 15*l.* to 25*l.* per fathom, but for the last 3 fms. the lode was poor. At 7 fms. behind the lode split, and then drove 7 fms. west on the middle branch, which has been worth from 15*l.* to 25*l.* per fathom. The lode in the end is 2 ft. wide, and worth 8*l.* per fathom for lead and jack. The 90 is extended west to the south part of this end is north for lead and jack 2*l* per fathom. The 90 is extended west on the north part of the lode from the point of horse (which is 20 fms. west from Burges's shaft) 40 fathoms. For 37 fms. the lode was worth from 15*l.* to 25*l.* per fathom, but for the last 3 fms. the lode was poor. At 7 fms. behind the lode split, and then drove 7 fms. west on the middle branch, which has been worth from 15*l.* to 25*l.* per fathom. The lode in the end is 2 ft. wide, and worth 8*l.* per fathom for lead and jack. The 90 is extended west to the south part of this end is north for lead and jack 2*l* per fathom. 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of Works for a strip of land to widen High-street, Vauxhall, Kennington), 13,651/-; purchase moneys on account of sales not completed, 11,290/-; repayments of advances from different accounts, 2025/-; total receipts, 24,965/- Payments—Purchase of estates, 160/-; expenses attendant upon such purchases, 354/-; amount advanced for permanent improvements, to be repaid to capital out of future revenue by instalments, 7870/-; total payments, 9825/- Balance on Dec. 31, 15,140/-

**GREAT WHEAL VOR.**—At the quarterly general meeting of shareholders, on Wednesday—the details of which appear in another column—it was mentioned by the Chairman (Mr. George Noakes, F.G.S.) that during the ten years of the present management upwards of 230,000/- worth of tin had been raised, of which more than 67,000/- had been distributed among the shareholders. Attention was also drawn to the fact that throughout the late depression, and notwithstanding the exceptionally low price of tin, these mines have continued to pay regular quarterly dividends, although a considerable proportion of the profits has been expended in completing the efficiency of the machinery, increasing the haulage power, providing tramways, re-modelling the dressing-floors, and in instituting improvements of various kinds for the more economic development of the property. The returns have been large and continuous, while the reserves remain undiminished, therefore the Chairman was justified in stating that the mines were permanent in character.

**NORTH LEVANT.**—It will be seen by the report given in another page that the meeting held at St. Just, on the 14th inst., was one of a very satisfactory character, and it is somewhat gratifying to find that all that has hitherto been said of this property appears to have been realised. The mine has been inspected by many of the most eminent miners in the kingdom, and all are agreed as to its great value. From the nature of the reports given from time to time it is believed that the sett has been worked with vigour and economy, and it would appear that the adventurers are upon the eve of being repaid for their patience and outlay.

**CORNWALL HEMATITE COMPANY (Limited).**—The operations of this undertaking are being pushed rapidly forward, and with prospects of early success. The ironstone produced from the company's properties is of a very rich description, averaging, according to analysis, 60 per cent. of metallic iron. With such a marketable article as this the shareholders may look for liberal returns on their investments.

**CAPEL BANHAGLOG (EAST MID-WALES) LEAD MINING COMPANY.**—Mr. Job Taylor has consented to join the board of directors. Operations at the mine have been commenced, and results similar to those realised at the contiguous mines—Brymstog and Mid-Wales—are confidently expected at an early stage of development.

**COBRE COPPER.**—This company being in course of reconstruction, the following statement may be of service. The mines have been worked for 33 years (1835 to 1867); the profits divided have been 10/- per share, being on 12,000 shares, 1,212,000. The ores raised during the 33 years amounted to 419,000 tons. To the end of 1847 the company paid an import duty on their ores averaging about 12,000/- per annum, and for the whole period the charge for the carriage of the ores from the mines to the port of shipment was 10s. per ton higher than the present rate. Had these payments not existed, 20/- per share more would have been divided, and the profits would have exceeded 40,000/- per annum. At present the unworked ground belonging to the company, on the line of the lodes east and west, is five times the length of that which has been worked upon. The plan of the new company is to give to the shareholders in the old company, for each share, two B shares of 5/- each fully paid-up, 10s. in cash, and the right to claim two A shares of 5/- each, bearing a preference interest of 15 per cent. on the amount called up. It is expected that this will not be more than 2/- 10s. per share, extending over three years. A profit of 20,000/- per annum, assuming 50,000/- or one-half of the A shares, called up, would give a dividend of 13s. 9d. per share, or 27/- per cent. on 2/- 10s. paid to the A shares, and 6s. 3d. per share, or 6/- per cent. on 5/- paid in full, to the B shares.

**NITRO-GLYCERINE.**—Some improvements in the preparation of this material have been patented in France by Mr. E. Kopp, of Saverne. He states that when three parts of sulphuric acid at 66° and one part of nitric acid at 48° or 49° are mixed together, nitrous vapours are disengaged for a considerable time. These vapours, besides being in the glycerine—one of the principal causes of so many terrible accidents—are extremely dangerous to the health of the workmen engaged in the preparation of this product. To remedy this Mr. Kopp mixes at first these acids in the same factory where they are prepared; an interval of several weeks is allowed to elapse between the mixings and the employment of the compound, which gives out, consequently, less vapours. Latterly it was found that if the vapours of mono-hydrated nitric acid, disengaged from the retorts where this acid is manufactured, be made to pass through a Wolfe's apparatus containing sulphuric acid at 66°, we finish by obtaining a veritable combination of mono-hydrated sulphuric acid with mono-hydrated nitric acid. The preparation of nitro-glycerine is thus effected. In wooden, cylindrical vessel, half or a third full of cold water, Mr. Kopp places a cylinder with a spout, either of cast-iron or steel, containing three or four litres, so that the surface of the cold water shall come within two or three centimetres of the edge of the metallic cylinder. Then a quantity of the nitro-sulphuric acid, as much as can be contained in a porcelain vase of one or two litres, prepared beforehand, is introduced into the steel cylinder. A second vase of tin, holding one-third of the porcelain one, is filled with glycerine, which is then added slowly to the acid, being kept stirred with an iron or steel rod, taking care that the mixture does not become heated. The reaction is allowed to take place during seven or eight minutes, after which the contents of the metallic cylinder are then poured into the water of the wooden vessel and continually stirred. After a few minutes repose the greater bulk of the water may be poured off, and the rest of the water poured along with the nitro-glycerine into a glass funnel furnished with a gutta-percha tube with a wire stop, so that the product which settles can be drawn off by degrees after every operation. By this means 600 or 700 grammes per operation, or 2 or 3 kilos. per hour are obtained.

**ARTIFICIAL FUEL.**—An improved composition for fuel has been patented in America by Messrs. STICKNEY and CHASE, of Lockport, New York. Their compound consists of coal, three parts; tan bark, two parts; sawdust, two parts; peat, or other fine woody or vegetable matter, one part; coal tar or pitch, one part, or sufficient to bind the whole, or they may be combined in a greater or less proportion of either, securing substantially the same result. The whole mass may be easily ignited with shavings or paper, or more readily by the application of a small quantity of benzine or a match. They state that the coal consists of screenings and other fine portions, which accumulate in great abundance in coal yards, and hitherto have been considered comparatively valueless. The tan bark used (commonly called spent tan bark) is also comparatively useless and very abundant. These with other ingredients, hitherto considered of little or no value, are so combined as to form a cheap and convenient fuel, and may be compressed, by mechanical power, into blocks convenient for use.

**ECONOMY IN PUDDLING.**—In these days of slackness of trade and retrenchment, economy should be studied in every branch of iron manufacture, and in no way can a greater saving be effected in puddling than by the use of Cambridge's Patent Fire Bars. These possess many advantages, not the least of which are that they are lighter and cheaper than those now in use, possess greater durability, more economical by the prevention of clinkers, and produce a higher ratio of steam. A testimonial, fully bearing out these great qualifications, has been received by the manufacturer, Mr. Alfred Ryland, Birmingham, from Mr. John Evans (Cymro Du), for many years a practical puddler, and over 20 years puddlers' and mills manager at Abernant, afterwards at Dowlais, and now at Waterloo Ironworks, West Bromwich. He says these bars "get the heat up better and work more regularly, and will burn cheaper or smaller coal, than the old flat bars." And he adds, "I have used these bars with what is called here 'rough slack,' and the iron has come round as soon as in the other furnaces with better coal, which saves a good deal in the price."—*Merthyr Telegraph.*

**PERSONAL LIABILITY OF DIRECTORS.**—The suit Henderson v. Lacon, Bart., was instituted by a shareholder in the Yarmouth Hotel Company, against the company and the directors, for the return of sums paid in respect of shares, and for the removal of the plaintiff's name from the list of shareholders, upon the ground of misrepresentations contained in the prospectus, one of which was that the directors and their friends had subscribed a large portion of the capital—the fact being that, down to the time when the plaintiff's shares were allotted to him, the directors themselves did not hold a single share in the company. The case was heard by Vice-Chancellor Wood (now Lord Justice), who decided that the defendants were personally liable to return the moneys paid by the plaintiff in respect of the shares, the directors having admitted that they were cognisant of the statements in the prospectus issued by their authority. The Vice-Chancellor also held that the plaintiff was entitled to have his name removed from the list of shareholders.

\* \* \* With last week's Journal a SUPPLEMENTAL SHEET was given, which contains—Royal School of Mines: Mr. Warington Smyth's Lectures (continued)—Mining in Canada, Annual Review—On the Waste of Mineral and Other Natural Products—The Progress of Mining, as a Science and Source of Commercial Wealth—Papers on Practical Mining—Swan River Coal and Brick Company Meeting—Mosquito Land Securities—Great Laxey Mining Company—Snaefell Mining Company—West Caradon Mining Company—Foreign Mine Reports, &c.

### The Mining Market; Prices of Metals, Ores, &c.

METAL MARKET—LONDON, MARCH 20, 1868.

COPPER.	£ s. d.	£ s. d.	IRON.	Per ton.
Best selected, p. ton	79	0	0	0
Tough cake and tile	76	0	0	78 0
Sheathing & sheets	82	0	0	83 0
Boats	83	0	0	—
Bottoms	84	0	0	88 0
Old (Exchange)	65	0	0	70 0
Burra Burra	83	0	0	83 10 0
Wire.....per lb.	0	1	0	1 0 0
Tubes	0	0	11 1/4	1 0
BRASS.	Per lb.	Per lb.	BRASS.	Per lb.
Sheets.....per lb.	9d.	—	9d.	—
Wire.....	8 1/4d.	9 1/2d.	Do., railway, in Wales	5 5 0
Tubes	10 1/2d.	11d.	Do., Swed. in London	7 6 8 10
Yellow Metal Sheath, p. lb.	7 1/4d.	—	Hoops	8 7 6 9 12
Sheets.....	7 0.	—	Sheets, single	9 2 6 10 0
SPERLTER.	Per ton.	Per ton.	SPERLTER.	Per ton.
Foreign on the spot	220	5 0 20	7 6	0
" to arrive	20	5 0 20	7 6	0
In sheets	£25	10 0	0 26	0 0
TIN.	Per ton.	Per ton.	STEEL.	Per ton.
English blocks	96	0 0	Swed., in kegs (rolled)	14 5 0
Do., bars (in barrels)	97	0 0	(hammered)	15 5 0 15 10 0
Do., refined.....	99	0 0	Do., in faggots	16 0 0
Banca	£23	0 0 94	English, spring	17 0 0 2 18 0
Straits	91	10 0	QUICKSILVER (p. bottle)	6 17 0 0
At the works, 1s. to 1s. 6d. per box less.			LEAD.	Per ton.
IC Charcoal, 1st qua.	1	7 0 1 10 0	English Pig, com.	19 10 0
IX DITTO, 1st quality	1	13 0 1 16 0	Ditto, LB.	19 15 0
IX DITTO, 2d quality	1	5 0 1 7 0	Ditto, WB	21 10 0
IX DITTO, 2d quality	1	11 0 1 13 0	Ditto, sheet	20 5 0
IC Coke	1	2 0 1 4 0	Ditto, red lead	20 15 0
IX DITTO	1	8 0 1 10 0	Ditto, white	27 0 0 30 0
Canada plates, p. ton	13	10 0	Ditto, patent shot	22 10 0 23 0
Ditto, at works	12	10 0	Spanish	18 10 0 18 15 0

\* At the works, 1s. to 1s. 6d. per box less.

**REMARKS.**—The Metal Market during the past week has exhibited a rather more quiet appearance, and has not been so lively as it had been during the previous fortnight; still there is no reason to apprehend that this is more than one of the usual fluctuations which may be expected to occur in the market after being in the depressed condition in which it had been for so long a period past, and which are sure to arise at first when the market is making an upward movement, and before it has become fixed in a permanently flourishing condition, and as this point has certainly not yet been attained, we must not be surprised if for some little time to come we find the market subject to these occasional periods of slackness. It may, therefore, be reasonably hoped that the present quietness will speedily give place to a more active state, and that eventually the metal market will become established upon a firm basis of prosperity, from which it will not be moved for a long time. Commercial affairs generally are undoubtedly in a much better position, and this is evidenced by the increased firmness of the money market, which shows that there is a greater demand for accommodation than there has lately been, and it seems that it is by no means improbable that, should the present demand continue, we shall have an advance in the Bank rate of discount ere long. Prices of metal have varied very little in the course of the week, and there does not appear much disposition on the part of makers and holders to make any concessions, from the slight improvement which had already occurred in prices, fully expecting that a reaction will soon again set in, and that better prices still will soon be obtained.

**COPPER.**—The last advices received from Chili report the charters to this country to comprise 1870 tons, of which 1525 tons consist of bars and ingots, and 345 tons of regulus. Since these advices the market has remained very quiet, and but few transactions have occurred, still no alteration has been made in prices, which continue as formerly quoted.

**IRON.**—In Staffordshire there is a slight improvement in the trade, and during the past week plates for shipbuilding purposes have been enquired for, while several orders have been received from the United States, and the demand for sheets and plates for India has been brisker than for some time past. This improvement is not, however, sufficiently marked to relieve the smaller houses from the strain which many have long felt, and an addition to the failures which have already occurred is not improbable. In Welsh the position of the trade remains about the same as last reported. From the United States enquiries have slackened a little. Confidence is entertained that the opening of the Russian season will bring a considerable accession of contracts, and there are already offers in the market for freights to that quarter. Last month the exports reached 8100 tons, of which New York alone took 6152 tons. The home demand continues quiet, with an occasional indication of increased vitality. In Swedish iron there is a little more movement, incident upon the opening of the navigation. In Scotch pig-iron there has been some little speculative enquiry during the week, and a good business has been done in warrants, the price at one time going up to 53s. 3d. cash, but has recently declined again to 52s. 9d. cash.

**LEAD.**—A fair business continues to be done, and prices remain very firm at the quotations.

**TIN.**—The market for Straits still remains steady, and though business has not been done to any great extent, the price continues firm at 91 10s. cash. English is rather firmer, and is now only obtainable at very nearly official quotations.

**SPERLTER.**—No great amount of activity has been manifested in the market for this metal during the week, and the price on the spot still remains at 20/- 5s. to 20/- 7s. 6d.

**TIN-PLATES.**—Still continue to maintain their position, a fair amount of business being done, and prices are very firm.

**STEEL** in rather better demand.

**QUICKSILVER.**—The enquiry has slightly improved, and rather more business has been done.

**THE MINING SHARE MARKET** has been moderately active this week; and, while one or two mines have advanced considerably, others have remained pretty steady. The standard for copper ore was stationary on Thursday. The mines principally dealt in have been Chontales, Prince of Wales, South Herodsfoot, Mary Ann, West Chiverton, Chiverton Moor, Chiverton Valley, West Frances, Wheal Grenville, Tincroft, Wheal Seton, Great Wheal Vor, East Caradon, Clifford Amalgamated (5 1/2 to 6 1/2), and a few others. Prince of Wales shares have kept pretty steady, and leave off 5s. to 5s. The lode in the 65 east is getting stronger and more kindly, and letting down more water, though not sufficient at present to drain the 55; and the agent is sanguine there will be ore to value before driving many feet. Other parts of the mine remain the same, and the ore sold on Thursday for 11s 2d., including carriage, and left a profit on the month of 540/- Bedford United, 22s. 6d. to 27s. 6d.; Carn Brea, 18 to 20; Chiverton Moor, 6 1/2 to 6 1/2; Devon Great Consols, 440 to 450; East Basset, 9 to 11. West Chivertons have been largely dealt in, and leave off 6s. to 6s. The 110 east is worth 60/- per fm.; the 110 west is not through the lode, but it is worth from 70/- to 80/- per fathom. The winze about 2 fms. before the 110 end, on the south part of the lode, has improved to 15/-, 20/- per fm. The 100, west of Burgess's, is worth 50/- per fm.; the 100, east of No. 3 winze, 50/- per fm.; west, 60/- per fm. East Caradon, 4 to 4 1/2; East Carn Brea, 30s. to 35s.; East Gunnislake and South Bedford, 2 1/2 to 2 1/2.

**Great Wheal Vor**, 18 1/2 to 19 1/2, ex dividend. At the quarterly meeting, held on Wednesday, a dividend of 7s. 6d. per share (2215/-, 10s.)

was declared, leaving 3110/- 14s. 3d. in hand. The accounts showed a balance in favour of the company of 5326/- 4s. 3d. The prospects of the mine are reported as being very satisfactory. Chontales Gold shares have advanced to 4 1/2, 4 1/2. The advices by the last mail are satisfactory, and the remittance of gold was 381 ozs. The cholera had entirely disappeared, and the men returned to their work. The tramway from Consuelo to San Domingo mills is completed, and operations at Consuelo commenced. Wheal Grenville, 31s. to 33s. At the meeting, held on Tuesday, the accounts, charging cost to end of January, showed a balance of liabilities over assets of 419/- 11s. 11d., and a call of 1s. per share was made. The agents report that the prospects of the mine, especially in the 90 and 100 fm. levels west, are of the most encouraging kind, and feel they are not too sanguine in expressing their belief that the time is not far distant when the mine will be working at a profit. East Lovell, 8 1/2 to 9. New Lovell, 10s. to 12s. 6d.; the lode in the 40 east is worth 60/- per fathom, the last 6 feet having turned out 1 ton 3 cwt. of tin. South Herodsfoot shares have advanced to 20s., 25s.; the favourable change in the ground in the shaft leads to the expectation of a good lode in the 100. East Russell, 15s. to 20s.; Frontino and Bolivia, 13s. to 15s.; Grambler and St. Aubyn, 3 to 4; Great Laxey, 17 to 18; Marke Valley, 6 1/2 to 6 1/2. Great Retallack, 2 1/2 to 3; in the winze below the 20 north there is a splendid branch of lead, worth 2 tons per fathom, which speaks well for the 30. North Crofty, 2 1/2 to 2 1/2; North Treskerby, 23s. to 25s.; Providence Mines, 26 to 28; South Frances, 2 1/2 to 2 1/2; Tincroft, 14 to 15; West Caradon, 7 1/2 to 8 1/2; West Frances shares have advanced to 33, 36; West Seton, 19 1/2 to 20 1/2. Chiverton Valley shares have been largely dealt in, at 4 to 5. The engine has gone to work, and the shaft recommended sinking to cut the lode worked into the sett from the Chiverton Moor 65 fm. level; this is the piece of ground about which so much was said and written on behalf of Chiverton Moor some months ago, and the prospects are said to be more than ordinarily good for a mining speculation, inasmuch as the lode has been productively worked into the sett by Chiverton Moor adventurers, and it will take about seven months to get to it in the 65 in Chiverton Valley, prior to which no

be judged of from the circumstance that it is already quoted at 1½ to 1½ prem.; and with regard to the progress made in the construction of the line, and its probable success, the reports are most satisfactory. On Tuesday, Mr. Charles Waring, M.P., the contractors, and the engineers of the line, made a thorough examination of the condition of the works. The line of the Metropolitan Railway from Kensington, via Paddington and Moorgate-street, to Tower-hill is well known, and the route which the Metropolitan District Railway will take from Tower-hill (Trinity-square) will be readily understood from the statement that there will be stations at Mark-lane, King William-street, Cannon-street, Bridge-street (Blackfriars), Norfolk-street (Strand), Charing-cross terminus, Houses of Parliament, Victoria station (Pimlico), Sloane-square (Chelsea), Cromwell-road (Kensington), and Gloucester-road, when it will again join the Metropolitan Railway. There can be little doubt that before the end of June the service between Paddington and the Houses of Parliament will be established; and when completed to the City the line will certainly not be less extensively patronised than the present Metropolitan Railway.

At the Truro Ticketing, on Thursday, 3611 tons of ore were sold, realising 16,2147.10s. The particulars of the sale were:—Average standard, 119.12s.; average produce, 6; average price per ton, 47.9s.6d.; quantity of fine copper, 218 tons 12 cwt. The following are the particulars of the sales during the past month:—

Date.	Tons.	Standard.	Produce.	Per ton.	Per unit.	Ore copper.
Feb. 20	3745	£113 6 0	63	£4 9 6	14s. 0d.	£70 3 0
27	1634	105 10 0	73	5 9 0	14 4	70 3 6
Mar. 5	2172	111 10 0	63	4 16 0	14 1	70 9 0
12	1373	123 2 0	54	3 13 6	14 1	70 8 6
19	3611	119 12 0	6	4 9 6	14 10	70 8 6

Compared with last week's sale, the standard is about stationary.

The Standards of Tin Ore were advanced on Wednesday, and are now as follows:—Common, 86s.; superior common, 87s.; fine, 88s.; superior fine, 89s.

At Great Wheal Vor United Mines meeting, on Wednesday (Mr. George Noakes, F.G.S., in the chair), the accounts made up to the present time showed a credit balance of 53247.9s. 3d. A dividend of 22057.10s. (7s. 6d. per share) was declared, leaving a balance of 3181.19s. 3d. to be carried forward to the credit of next account. Details in another column.

At Craddock Moor Mine meeting, on Thursday, the accounts showed a debit balance of 2071.16s. 8d., and a call of 6s. per share was made. The agents reported on the various points of operation, and expect to have about 165 tons of copper ore to the credit of the next account.

At New Pembroke Mine meeting, on March 10, the accounts for four months ending December showed a debit balance of 5287.7s. 2d. A call of 2s. per share was made. Captain F. Puckey, J. Whitburn, and A. Cundy say—"The prospects of the mine are now such that we strongly recommend a new shaft being sunk with as little delay as possible, in order to intersect the lode at the 120 ft. level."

At Par Consols Mine general meeting, on March 10 (the Rev. Dr. Treffry in the chair), the accounts for the four months ending December showed a debit balance of 29032.1s. 9d. Captain F. Puckey, G. Job, J. Whitburn, and A. Cundy say—"Within the next four months we expect to cut the lodes in the 80 and 40 fm. level cross-cuts, and the accounts for the past four months show that our returns have nearly met the costs of the mine."

At Wheal Trelawny meeting, on Tuesday (Mr. Nicholson in the chair), the accounts showed a debit balance of 355. A call of 15s. per share was made. Details in another column.

At North Levant Mine meeting, on March 14, the statement of accounts showed a debit balance of 7481.6s. 10d.; but the capital account having been credited with the 36000, charged to the Stennick Mine, there remains to the credit of the adventurers of North Levant 251.1s. 2d. Captains, Bennetts and Thomas say—"It is very evident that we have a very fine piece of mining property, judging from the geological position of this mine and the number of lodes to be found, and these opinions of ours have often been corroborated by the most practical and experienced miners of the day, and that the mine will work for ages to come. Our sales of tin in the ensuing six months will be considerably increased, and we believe we shall soon be able to work so as to remunerate the shareholders for their outlay."

At the Mwyndy Iron Ore Company meeting, on March 14 (Mr. Charles Capper, M.P., in the chair), a dividend of 2s. per share was declared. Details in another column.

At the Anglo-Argentine Mining Company general meeting, on Wednesday (Mr. H. Haymen in the chair), the Chairman stated that the meeting had been called to pursue the clause in the Act of Parliament, but as Mr. Barnard (their manager) had not as yet taken possession of the property, there was nothing to communicate to the shareholders beyond the information already conveyed to them. In reply to a shareholder, the Chairman said that there were upwards of 28,000 shares subscribed for, including the 15,000 to Major Rickard, which, on his (Major Rickard's) own proposition, he had agreed to take, in lieu of cash. The directors had no doubt but that amount would be sufficient for fully developing the property, as they did not intend to devote the whole of their attention to mining, but to include, to a great extent, the purchasing of ores from the natives, and thus become, as it were, the mint of the district. Samples of these ores, and those being produced from the company's mines, were on the table for inspection by the shareholders. It would be premature for him (the Chairman) to say anything respecting the value of the property until legal possession of it was obtained, but he trusted that at the first annual meeting the shareholders would admit that the directors had not overstated the prospects of the property. A cordial vote of thanks to the Chairman closed the proceedings.

The Bank of England return for the week ending on Wednesday evening showed in the ISSUE DEPARTMENT an increase in the "notes issued" of 117,6551, represented by a corresponding increase in the coin and bullion on the other side of the account. In the BANKING DEPARTMENT there is shown an increase in the "rest" of 46761, and in the "public deposits" of 1,071,1021, together 1,075,7781, a decrease in the "other deposits" of 588,4761, and in the "seven day and other bills" of 28,7531, together 617,2291, 458,4891. On the asset side of the account there is shown an increase in the "Government securities" of 40331, and in the "other securities" of 265,1791, 209,2621; and, deducting this from the increase on the other side of the account, there remains an increase in the total reserve of 219,2871.

On the Stock Exchange Mining Shares have been in active request during the week. The following prices were officially recorded in British Mining Shares:—West Caradon, 8½; Providence, 26½; Tin-croft, 14½; Devon Great Consols, 448, 445; Clifford, 5½, 5½; West Chiverton, 65, 64½; East Caradon, 3½; Great Wheal Vor, 19. In Colonial Mining Shares the prices were:—Yudanamutana, 1 13-16ths, 1½; Scottish Australian, 1 1-16th, 1½, 1; Port Phillip, 1 5-16ths, 1½; Cape Copper, 10.—In Foreign Mining Shares the prices were:—Chontales, 3½, 3½, 3½, 4½; Don Pedro, 2½, 2 7-16ths, 2½, 2½, 2 11-16ths, 2½, 2½, 2 7-16ths prem.; Linares, 2½; Pestarena, 2½; St. John del Rey, 1½, 1½, 2½, 2½, 2½, 2½, 2½, 2½, 2½; United Mexican, 1 9-16ths; Rossa Grande, 1-16th dis.

COAL MARKET.—The fresh arrivals this week only number 105 ships. The demand for all kinds of coal has been steady at the quotations of last week. Hetton Wallsend, 18s. 6d.; South Hetton Wallsend, 18s.; Hartlepool Wallsend, 16s. 3d.; Original Hartlepool Wallsend, 18s.; Framwellgate Wallsend, 14s. 6d.; 26 cargoes unsold; 40 ships at sea.

EXPORTS OF COAL.—By the Monthly Circular of Messrs. Higginson, Liverpool, we learn that the quantity of coal exported in Feb. was 581,687 tons, against 611,467 tons in the corresponding month of 1867, showing a decrease of 29,780 tons. The particulars are:—From the Northern Ports, 257,589 tons; Yorkshire, 14,755 tons; London, 456 tons; Liverpool, 52,057 tons; Severn Ports, 210,827 tons; and Scotch Ports, 41,883 tons. The increase was—London, 1220 tons; Liverpool, 1325 tons; Severn Ports, 17,544 tons. The decrease—Northern Ports, 44,416 tons; Yorkshire, 3612 tons; Scotch Ports, 1841 tons. Total, Jan. to Feb., 1,176,138 tons; corresponding month last year, 1,127,027 tons: showing an increase of 49,111 tons.

COAL CONTRACT.—The Admiralty require the supply of 1000 tons of South Wales (smokeless) Coal, for Her Majesty's ships at San Paulo de Loando.

SEAMEN'S CLOTHING.—The Admiralty are inviting tenders for the supply of various articles used in the manufacture of seamen's clothing, the list of which will be found in the advertising columns of this day's Journal. Amongst the articles required are 13,000 gross of white metal buttons, 500 gross of crown and anchor middling, and 250 gross of crown and anchor small. The tenders are to be sent in before Monday, April 6.

COPPER TRADE.—Messrs. Vivian, Younger, and Bond (March 20) write:—The transaction which took place during the first fortnight of the current month absorbed all the parcels of West Coast produce which were obtainable at the market price, and more could not have been had without a further rise in price. On Monday the mail from Valparaiso was delivered, bringing the intelligence of charters having been effected during the second half of January, comprising 1860 tons of fine copper, of which 1500 tons were bars. This caused some second-hand holders to be disposed to sell, and 90 tons of a good brand of Chilli bars were sold at 72s. 10s. Importers, however, have viewed the news by the mail as rather favourable for the immediate future of the metal, and have not pressed anything on the market. The consequence has been a pause in transactions. At Havre, however, as well as in Paris, business has been done at a higher proportionate price than above named, and the market has reassumed a firm aspect, several buyers of spot parcels having yesterday appeared at 185 frs. per 100 kilos. (the equivalent of 72s. in Liverpool), whilst no sellers could be found

under 187·50 frs., equal to 73s. usual Liverpool cash terms. A cargo of regulus, to arrive at Swansea, was taken by smelters at 15s. Early in the week 100 tons of Wallaroo were sold at 82s., prompt three months, and a few small parcels at 81s. cash, which latter is the price asked.

Vice-Chancellor Malins has appointed Mr. Snell (F. B. Smart and Snel, accountants) liquidator of the Tamar Bank Granite Company (Limited).

AUSTRALIAN UNITED GOLD MINING COMPANY.—The allotment letters were issued yesterday. Mr. Kitto will probably start for Victoria next month to complete the transfer of the properties, and commence the works.

GEOLOGICAL SOCIETY OF LONDON.—March 11: Prof. T. H. Huxley, LL.D., F.R.S. (President), in the chair. John Pigot, The Elms, Utting Maldon, Essex, was elected a Fellow. The following communication was read:—

"On the Structure of the Crag-Beds of Norfolk and Suffolk, with some Observations on the Organic Remains.—Part I. Coralline Crag by Joseph Prestwich, F.R.S., F.G.S., &c.

On the following papers will be read:—1. On some New Forms of Palaeozoic Crabs," by Henry Woodward, F.Z.S., F.G.S.—2. "On the Coniston Group," by Prof. Harkness, F.G.S., &c.—3. "Death of Fishes on the Coast of the Bay of Fundy," by Dr. A. Lett Adams, F.G.S.

RAILWAYS, AND THEIR MANAGEMENT.—At the Society of Arts, on Wednesday, Mr. R. F. Fairlie, C.E., read a paper on this subject, the object of which was to direct attention to his system of constructing engines, which he stated would turn any curve and ascend any gradient, and for which he claimed many advantages. Mr. Fairlie said that he had at present at work on a Welsh railway engines without tenders, where the fuel and water were highly conducive to the power, economy, and safety of the engine. The paper was well received, and the opinion of the meeting appeared to be that, if the suggestions were practicable, a saving might be effected by their adoption. The Chairman (the Marquis of Clanricarde), in proposing a vote of thanks to Mr. Fairlie, expressed himself in favour of the system, and considered it particularly applicable to Ireland, where they much require cheapness and efficiency combined.

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THE IRON TRADE IN FRANCE.—The depression in the iron trade does not appear to be confined to this country, for it appears that the great foundries of Nantes are to be closed on April 11, notice having been given to the clerks and workmen that "the introduction of English, Belgian, and Swedish Iron duty, by the traffic 'in permits,' is the ruin of most of the forges of France, and especially of those situated on the West Coast. Our urgent and repeated appeals to the Government against this deplorable abuse have not been attended to, and the free traders following up their system of the destruction of our national work, it is impossible to continue the working of iron at Nantes, and to support the losses which must now follow the carrying on of such business. In consequence of the decision of a meeting of the shareholders of the company of Basse-Indre, the forges of Nantes will cease working on April 11. The directors, therefore, give notice to all employed by them that their engagement will cease on that day."

THE AMERICAN-ABYSSINIAN WELL TUBE AND BORER.—The perfect efficacy of this invention, with some recent important improvements, was practically and most successfully illustrated by Mr. J. L. Norton, on Saturday last, at Thames Ditton, in presence of a large number of gentlemen scientifically and commercially interested in its performance. Space permitting, we shall give a full description, with diagrams, in next week's Journal.

COAL SALESMAN.

WANTED, an ENERGETIC PERSON to undertake the SALE OF WARKWICKSHIRE COALS IN THE LONDON AND OTHER MARKETS. Security will be required, as well as good references as to character and capability. The party would be required to devote the whole of his time to the sales of the coals of one colliery.

Applicants to direct to "P. A.," Post Office, Coventry.

TO STEAM BOILER MANUFACTURERS.

WANTED, a Person to MAKE a STEAM BOILER on a NEW PLAN, that would SAVE ONE-HALF the present CONSUMPTION of COAL, and BURN ITS OWN SMOKE.

For particulars, apply personally to Mr. JAMES HARBERT, No. 32, Waterloo-street, Kidderminster.

TO ENGINEERS AND COLLIERY PROPRIETORS.

WANTED, by a Young Man, an ENGAGEMENT as SURVEYOR. Surveys accurately, both surface and underground, and in neat draughtsmen.

Address, "M. S." MINING JOURNAL Office, 26, Fleet-street, London, E.C.

WANTED, FIVE GENTLEMEN WILLING to INVEST TWO HUNDRED POUNDS each, for PLACING an extensive SLATE AND SLAB QUARRY in NORTH WALES in a REMUNERATIVE STATE.

Slate and slab manufacturing on a large scale may be resumed immediately. The present proprietors are willing to accept a small percentage as their interest on all profits realised over 10 per cent. The property has been favourably reported on by some of the best authorities in the kingdom.

All particulars may be had from Mr. EDMUND SPARGO, Mining Engineer, Llanerchymed, near Bangor.—March 18, 1868.

WANTED, by a PRACTICAL MINER, aged 29, who has had three years' experience, a SITUATION as MANAGER. No objection to go abroad, or under a railway company. Unexceptionable references. Apply to "X. Y. Z." Post-office, Stoke Clinsland, Callington.

WANTED, by the Advertiser, A GENTLEMAN to JOIN HIM in OPENING a RICH TIN LODE. The lode has been proved for 200 fms. in length, and immense quantities of rich ore have been raised only a few feet from surface. It is the richest lode in the district.

All particulars can be had by applying to "A. B." MINING JOURNAL Office, 26, Fleet-street, London.

WANTED, FOUR THOUSAND POUNDS, upon SECURITY of an EXCELLENT COLONIAL COLLIERY.

Apply, with real name and address, to J. H. HOWARD, Esq., solicitor, Queen-court, Chancery-lane.

WANTED, a CORNISH PUMPING ENGINE (second-hand) from 70 to 80 in. cylinder, in good working order.

Apply, stating price, maker's name, and how long at work, to Mr. MATTHEW WINTER, Haydon Bridge, via Carlisle.

WANTED, a FITTING SHOP and FOUNDRY, with MACHINERY, suitable for GENERAL ENGINEERING WORK, capable of employing about fifty men.

Apply, by letter, to Mr. J. GRAFTON JONES, M.E., Blaina, near Newport, Monmouthshire.

A PARTNER WANTED, to join a Firm, who can, if required, speculate from £300 to £400 to SEARCH for GOLD in one of the most promising lodes in NORTH WALES, about three miles north of the Clogau Gold Mine.

For particulars, apply to Mr. SAMUEL FERNELL, Main Offeran Slate Quarry, Dolgaridu, Festiniog, North Wales.

A Gentleman experienced in the laying out of Mining Plant; the Construction, Erection, and Maintenance of heavy Pumping and Wind-ing Engines; Machinery for Washing Coal and Dressing Metallic Ores; practically acquainted with Locomotive, General Railway, Millwright, and Ironfoundry Work; IS OPEN TO AN ENGAGEMENT as GENERAL or ASSISTANT MANAGER. Has held a similar position for many years.

Address, "G. L.," care of John Horsley, Esq., Metal Broker, St. Ann's-square, Manchester.

TO CLOSE A TRUST.—ON SALE, about ONE HUNDRED AND FIFTY SHARES in the TRELOGAN LEAD MINE, situate near HOLYWELL, FLINTSHIRE. The shares are fully paid up—namely, £1 per share—and must be sold.

Apply to Mr. LEDWARD, Crypt Chambers, Chester.

MINE SHARES FOR SALE:—50 Prince of Wales, 53s.; 25 Chontales, £4½; 10 Chiverton, £3; 50 Wheal Grenville, 31s.; 50 East Gronville, 30s.; 20 South Condor, 9s. 6d.; 2 West Chiverton, £65; 5 West Caradon, £7½; 5 Clifford, £5½; 3 St. John del Rey, £17½.

Apply to H. TURNER, 11, Cross-lane, St. Mary-at-Hill, E.C.

CHONTALES GOLD AND SILVER MINING COMPANY (LIMITED).—The Advertiser has FOR DISPOSAL FIVE HUNDRED FULLY-PAID SHARES in the above.

Address, first instance, "S. W.," 58, Charles-street, Westminster.

WEST GODOLPHIN.—AN OFFER WANTED for FIFTY or ONE HUNDRED SHARES in this DIVIDEND MINE. No bond or bid refused.

Apply to "G. G.," Post-office, Bloomfield-street, E.C.

## WATSON BROTHERS' MINING CIRCULAR.

WATSON BROTHERS,  
MINING AGENTS, STOCK AND SHARE DEALERS, &c.  
1, ST. MICHAEL'S ALLEY, CORNHILL, LONDON.

MESSRS. WATSON BROTHERS beg to notify to their friends and the public generally that Mr. W. H. CUELL has retired from the firm, in accordance with a clause in the deed of partnership; and having also sold to the remaining partners all his right, property, and interest in the business hitherto carried on by J. Y. WATSON, F.G.S., NAPOLEON FREDERICK WATSON, and himself, under the name of "WATSON and CUELL," the same will be carried on in future by Mr. J. Y. WATSON and Mr. N. F. WATSON, under the designation of "WATSON BROTHERS," and they take this opportunity to return their most sincere thanks for the great patronage bestowed and confidence reposed in the firm for 24 years, and to assure their friends and clients it will be their earnest endeavour to merit a continuance of both.

MESSRS. WATSON BROTHERS have made arrangements for continuing their weekly Circular, which has had a large circulation for many years, to the columns of the *Mining Journal*, their special reports and remarks upon mines and mining, and state of the share market, will in future appear in this column.

In the year 1843, when Cornish mining was almost unknown to the general public, attention was first called to its advantages, when properly conducted, in the "Compendium of British Mining," commenced in 1837, and published in 1843, by Mr. J. Y. WATSON, F.G.S., author of "Gleanings among Mines and Miners," "Records of Ancient Mining," "Cornish Notes" (first series, 1862), "Cornish Notes" (second series, 1863), "The Progress of Mining," with statistics of the Mining Interest, annually for 21 years, &c., &c. In the Compendium, published in 1843, Mr. WATSON was the first to recommend the system of a "division of small risks in several mines, ensuring success in the aggregate," and Messrs. WATSON BROTHERS have always a selected list on hand. Perhaps at no former period in the annals of mining has there been more peculiar need of honest and experienced advice in regard to mines and share dealing than there is at present; and, from the lengthened experience of Messrs. WATSON BROTHERS they are emboldened to offer, thus publicly, their best services to all connected with mine or the market, as they have for so many years done privately, through the medium of their own Circular.

MESSRS. WATSON BROTHERS transact business in the purchase and sale of mining shares, and other securities, payments of calls, receipt and transmission of dividends, obtaining information for clients, and affording advice, to the best of their knowledge and judgment, based on the experience of more than 30 years active connection with the Mining Market.

MESSRS. WATSON BROTHERS also inform their clients and the public that they transact business in the public funds, railway, docks, insurance, and every other description of shares dealt in on the Stock Exchange.

MESSRS. WATSON BROTHERS are also daily asked their opinion of particular mines, as well as to recommend mines to invest or speculate in, and they give their advice and recommend mines to the best of their judgment and ability, founded on the best practical advice they can obtain from the mining districts, but they will not be held responsible, nor subject to blame, if results do not always equal the expectations they may have held out in a property so fluctuating as mining.

MESSRS. WATSON BROTHERS having agents and correspondents in all the mining districts, and an extensive connection among the largest holders of mining property, have the more confidence in tendering their advice on all matters relating to the state and prospects of mines and mining companies, and are able to supply shares in all the best mines at close market prices, free of all charge for commission.

"A SHAREHOLDER."—The shaft at South Herodsfoot is now down about 93 fms., and the lode will be cut at the 100, in ground that can scarcely fail to make ore. Shares have been in demand for some days, and are, we think, likely to advance. Herodsfoot, on the same lode, has been paying 5000*l.* a year in dividends for some years.

"QUOTATIONS."—The Stock Exchange quotes Chontales 4*1/2* paid, the Mining Exchange 5*1/2* paid, and this accounts for the discrepancy in the quotations referred to by our correspondent.

SATURDAY, MARCH 14.—Good demand to-day for West Chiverton, West Frances, Seton, Carn Brea, Chiverton Moor, and Clifford. Prince of Wales, 5*1/2* to 5*1/2* ; Chiverton, 6*1/2* to 7 ; Chontales Gold, 3*1/2* to 4*1/2* ; Great North Laxey, 1*1/2* to 2*1/2* ; Great Wheal Vor, 18*1/2* to 19*1/2* ; Wheal Grenville, 2*1/2* to 3*1/2* ; West Frances, 2*1/2* to 3*1/2*.

MONDAY.—Market active for Chontales at an advance of 10*1/2* per share. West Chiverton, Chiverton Moor, West Frances, Clifford, and Carn Brea also in demand at an advance. Chontales, 4*1/2* to 4*1/2* ; Prince of Wales, 5*1/2*, to 5*1/2* ; Clifford, 6*1/2* to 6*1/2* ; Prince of Wales, 5*1/2*, to 5*1/2* ; East Caradon, 3*1/2* to 4 ; Great Vor, 18*1/2* to 19*1/2* ; Chiverton Moor, 6*1/2* to 7 ; Wheal Grenville, 3*1/2* to 3*1/2* ; Grambler and St. Asaph, 5*1/2* to 6.

TUESDAY.—Active demand to Chontales at a further advance. Chiverton Moor, West Chiverton, West Frances, Grenville, and Clifford are enquired after. Chontales, 4*1/2* to 4*1/2* ; Chiverton Moor, 6*1/2* to 7*1/2* ; West Chiverton, 6*1/2* to 7*1/2* ; West Frances, 2*1/2* to 3*1/2* ; Grenville, 3*1/2* to 3*1/2*.

THURSDAY.—Market dull. Chontales better at 4*1/2* to 4*1/2* ; Grenville, 3*1/2* to 3*1/2* ; West Frances, 2*1/2* to 3*1/2* ; Chiverton Moor, 6*1/2* to 7*1/2* ; Prince of Wales, 5*1/2* to 5*1/2* ; West Herodsfoot, 10*1/2* to 15*1/2*.

FRIDAY.—Market rather quiet. Prince of Wales, 5*1/2*, to 5*1/2* ; Chontales, 4*1/2* to 4*1/2* ; Mary Ann, 2*1/2* to 2*1/2* ; Seton, 8*1/2* to 9*1/2* ; West Seton, 19*1/2* to 20*1/2* ; Chiverton Moor, 6*1/2* to 7*1/2*, chiefly dealt in.

**THE ELECTRIC TELEGRAPH.**—It is a remarkable fact that there are almost invariably several claimants to a discovery, whether scientific or industrial, and the electric telegraph forms no exception to the general rule, the dispute between Messrs. Cooke and Wheatstone to the right to the honour of the first introduction having continued as warm to the present day as at the time it commenced more than a quarter of a century ago. A volume has just been issued (through Messrs. Simpkin, Marshall, and Co., Stationers' Hall-court), discussing the "Authorship of the Practical Electric Telegraph of Great Britain," by Mr. THOMAS FOTHERGILL COOKE, M.A. Inventions of the greatest ultimate value are so frequently brought forward in a comparatively crude state, and the several steps necessary for perfecting them are usually so imperceptibly small that where more than one person is interested it is extremely difficult to define the exact proportion of merit due to each; yet there is a line, not always very marked, where an invention passes from an insipid suggestion to a valuable application of skill, and it is usual to give the honour of originating to the man who first passes the line mentioned. Upon this principle the honour of originating our railway system is given to George Stephenson, although many had previously suggested, and even used, short lines; and, although the modifications introduced since Stephenson was first engaged on the Liverpool and Manchester have done much to change the entire aspect of our railways. In connection with electric telegraphs, the first who passed the line was undoubtedly William Fothergill Cooke, and the improvements in practical electric telegraphy since introduced are his modifications of the system inaugurated by him. Sir Charles Wheatstone probably worked as laboriously as his partner after they became associated with each other, but this proves nothing as regards the originating of electric telegraphic communication. Mr. Cooke claims, in 1849, in a letter to Mr. Wheatstone, to be "the original projector of the practical telegraph, and the inventor equally and jointly with himself, standing in point of merit upon precisely the same ground," and the justice of this claim Sir Charles Wheatstone has never disproved, so that Cooke may be considered to occupy the same position in connection with the electric telegraph as does Stephenson in connection with the railway system.

**THE MONETARY COMPANIES OF LONDON.**—A very useful little volume, being the sixth half-yearly issue of "The London Banks, Credit, Discount, and Finance Companies," has just been published by Mr. Utley, of Threadneedle-street, showing their directors, managers and secretaries, capitals and reserve funds, dividends and bonuses, shares and transfer forms, meetings and board days, and the situation of their offices. There are also given lists—each in alphabetical order—of discount brokers, financial agents, &c., of directors of the banks, credit, discount, and finance companies, of the partners in London private banks, and of the managers and secretaries of London banks. The value of the book is much enhanced by an able summary of the latest reports of the companies referred to, and worthy of very general patronage by men of business.

**THE MINES OF THE RIO TINTO.**—A very interesting volume has just been issued in Spain, entitled—"Minas de Rio Tinto: Estudios sobre la Explotación y el Beneficio de sus Minas," by Don Ramon Rua Fligueron, Mining Engineer. The first portion of the work, which is divided into two parts, consists of practical scientific notices of the working of the Rio Tinto mines, and the treatment of them by the process of cementation; whilst the second refers to the description of the smelting of the richer ores, and the economic results. The work will be fully referred to in a future notice.

**GOLD MINING IN NOVA SCOTIA.**—In reviewing the mining operations of the last year Mr. Robert Robertson, the Chief Commissioner of Mines for the Province, in his report to the Lieutenant-Governor, observes that they have cause both for congratulation and regret. In the gold mining, the success may be considered good, both in the increase of gold obtained and the average rate per ton of quartz crushed; whilst the average remuneration for each man "counting 313 days in the year, and the gold at \$18.50 per oz." is \$244 per cent per day—a result believed, without a parallel, in any country. Although the yield of gold, when compared with some gold-producing countries, may appear small, the progress has been steady. In the year ending Dec. 31, 1862, the amount raised was 673*1/2* oz., and for year ending Sept. 30, 1867, it was 27,583 oz. And this progress, considering the number of paying mines in the old district, and the promising localities outside of these districts that have been found during the past year, will, he believes, be fully kept up; and when too, we consider that between Cape Sable and Canso we have a gold-bearing country over 250 miles long, and fully 25 miles wide, in every part of which as productive mines may be found, as any now worked, we cannot but believe that the gold mining in Nova Scotia is only in its infancy. We may also expect a large increase in the working of the poorer mines; leads are now operated upon profitably which, at the commencement of mining operations, could not have been worked, except at a loss, and there is no doubt that with the increased experience in mining, and in separating the gold from the ores, many leads now deemed worthless will be worked; and though under the present system of manipulation the profits are large, yet it is well-known that a large percentage of the gold contained in the quartz is not saved.

**COMPANIES WINDING-UP.**—It has been held by the Lords Justices, in 1867, that the Metropolitan Railway Warehousing Company (Limited), that when a winding-up petition is presented the Court of Chancery should, as far as possible, either make an order to wind-up the company, if it be a fit case, or dismiss the petition; for, if the petition be adjourned, and a winding-up order should be ultimately made, the winding-up would date back to the presentation of the petition, and void, or imperil, anything done by the company in the meantime.

## NOTICES TO CORRESPONDENTS.

\*\* Much inconvenience having arisen in consequence of several of the Numbers during the past year being out of print, we recommend that the Journal should be filed on receipt: it then forms an accumulating useful work of reference.

**EARLIER PUBLICATION OF THE MINING JOURNAL.**—To meet the wishes of a large number of subscribers, arrangements have been made to publish two hours earlier than heretofore. By this improvement the *Mining Journal* can be delivered in Birmingham, Bradford (Yorkshire), Huddersfield, Leeds, Liverpool, Manchester, Salisbury, Southampton, and Wolverhampton by mid-day at latest, or from four to six hours earlier than previously. Subscribers in the metropolitan districts should likewise receive the Journal by the first morning delivery, and any complaint of their not doing so will be at once attended to.

**NEW QUERADA COMPANY.**—Information is desired from the secretary of this company for the benefit of many shareholders, which if he would kindly give in the columns of the *Mining Journal* would be much appreciated. It is—Why was the railway made from Tucuca instead of using the River Aroa, which was said to be navigable as far as Palma-Sola. The original programme was to have the railway made from this place, using the river for the conveyance of all suitable materials, and, commencing it at Palma-Sola, carry it forward to Las-Hacha, in the neighbourhood of the mines. Supposing the river really to be navigable to the extent mentioned, this appeared to be a very feasible and judicious course; and why it was departed from we are curious to know.—B.

**ADVERTISING PRICES OF MINE SHARES.**—Seeing an advertisement in last week's Journal, offering a number of shares in New Wheal Lovell at 1*1/2* per share, I wrote to a friend to make personal application for them, and the following is his reply:—" (as usual) is not a seller of the shares. Surely there ought to be a remedy to compel parties so advertising to deliver the stock offered.—CHARLES BAWDEN.

**LEAD SMELTING.**—"F. W. P."—I am not at liberty to communicate the particulars of Mr. Forster's process, further than I have already done.—M. E.

**ON THE WASTE OF MINERAL AND OTHER NATURAL PRODUCTS.**—In the concluding sentence of my letter in last week's Journal, I find some omissions have inadvertently been made, which gives the statement an air of absurdity and improbability. It should read—"From 6 to 8 gallons of fish oil, worth on an average 3*1/2* d. per gallon, is also obtained by compression from 1 ton of salt mackerel, capelin, or cod oil." Cod deprived of its liver and offal yields little or no oil.—W. T. RICKARD, F.C.S. : 2, *Crown-chambers*.

**BWLCH-Y-PLYM LEAD MINE.**—Can any correspondent oblige by communicating some information respecting the company formed for working this property? Its position and prospects?—T. B.

\*\* We have a few volumes of the *Mining Journal* for 1867, neatly bound, which can be had, price 30*1/2*, either direct from the office, or through any bookseller or news agent.

THE MINING JOURNAL.  
Railway and Commercial Gazette.

LONDON, MARCH 21, 1868.

## TECHNICAL EDUCATION.

Although the importance of scientific knowledge to practical men can scarcely be over-estimated, it has been generally felt that to attempt to make technical education compulsory upon all persons indiscriminately would be very objectionable; and in the *Mining Journal* of Oct. 12 last it was pointed out that the machinery of the Royal School of Mines might advantageously be availed of for affording the advanced scientific instruction required. It is satisfactory to find that the Committee of Council on Education have, in their minute just issued, fully endorsed that view; whilst the general arrangements for the Science and Art Examination have been so modified as to secure, to all who seek it, facilities for the acquisition of the necessary primary technical education. In order to assist the artisan classes who may show an aptitude for scientific instruction, the Committee resolve to aid local efforts in founding scholarships and exhibitions. The scholarship is intended to maintain the student while remaining at the elementary school, and the exhibition to support him while pursuing his studies at some central institution, where the instruction is of a high grade.

The Department will grant 5*1/2* (an elementary scholarship) towards the maintenance of a deserving student at the managers of any elementary school who undertake to support him for one year, and subscribe also at least 5*1/2* for that purpose. The conditions are that only one such scholarship be granted to schools of less than 100 students, and one additional for each additional 100; that the scholarships be awarded in competition, the absolute terms of which will be left to the managers of the school, subject to the approval of the Department; that the scholar shall be an artisan or "poor student" between 12 and 16 years of age; that he shall not be the teacher, pupil-teacher, or other paid servant of the school; that he shall continue regularly to attend the day school; and that he shall pass in some one or more branches of science at the succeeding May examination of the Department, after which the Department grant of 5*1/2* will be paid. These grants will be made from year to year on the condition that the student each year pass in a new subject, or in a higher grade of the same subject in which he first passed. It will be for the locality to determine for how many years the student may hold the scholarship, but in no case can he be allowed to hold it for more than three years.

The Department will grant 10*1/2* (a science and art scholarship) towards the maintenance of a student at an elementary school who has taken a first grade in Freehand or Model Drawing and Elementary Geometry, and passed in one of the subjects of science. The conditions are that one scholarship be granted to the 100 scholars (as above); that the scholarship be awarded to the most successful students in the school; that the scholar be an artisan or "poor student" between 12 and 16 years of age; that he be not the holder of an elementary school scholarship, nor the teacher, pupil-teacher, or other paid servant of a school; that he continue regularly to attend the day school, and obtain at least a third class in the subject of science in which he has already passed, or pass in some other subject; and that in each year of holding the scholarship he shall pass, either in a higher grade of the same subject, or in a new subject.

The Department will grant 25*1/2* (a local exhibition) per annum to the managers of any school or educational institution, or any local committee formed for the purpose, who will raise the like sum by voluntary contribution for the maintenance of a student at some college or school where scientific instruction of an advanced character may be obtained. The exhibition may last one, two, or three years. The conditions are that the exhibition shall be awarded in competition, in one or more branches of science at the May examination of the Department. The managers may select any branch or branches of science for the competition, and if more than one be taken they may fix any relative amount of marks they consider best to assign to them. The place where the student is to pursue his studies may be fixed by the managers, subject to the approval of the Department. If a Government institution be selected, such as the Royal School of Mines or Royal College of Chemistry, London, or the Royal College of Science, Dublin, the fees of the student will be remitted. The exhibitor must be of the artisan class or a "poor student." The grant of the Department will be paid from year to year on condition that a like payment has been made by the managers or local committee, and that the student has pursued his studies satisfactorily according to regulations fixed by the Department.

It will be seen that this minute creates three descriptions of prizes for the encouragement of science, instruction, and for the support of students of the industrial classes while continuing their education. The science subjects in which the Department aids instruction are:—

PRACTICAL PLANE AND SOLID GEOMETRY.  
BUILDING CONSTRUCTION, OR NAVAL ARCHITECTURE AND DRAWING.

ELEMENTARY MATHEMATICS.  
THEORETICAL MECHANICS.  
ACOUSTICS, LIGHT, AND HEAT.  
INORGANIC CHEMISTRY.  
MINERALOGY.  
VEGETABLE PHYSIOLOGY AND ECONOMIC BOTANY.  
NAUTICAL ASTRONOMY.  
STEAM.  
MINING.

HIGHER MATHEMATICS.  
APPLIED MECHANICS.  
MAGNETISM AND ELECTRICITY.  
GEOLOGY.  
ORGANIC CHEMISTRY.  
ANIMAL PHYSIOLOGY.  
ZOOLOGY.  
SYSTEMATIC BOTANY.  
PHYSICAL GEOGRAPHY.  
NAVIGATION.

In order to place a school or class in connection with the Science and Art Department, a committee consisting of at least five persons must be formed, and undertake certain duties of superintendence in connection with it. The payments to the teacher vary from 1*1/2* to 5*1/2*, according to the class in which the student is placed. There are five classes, the fifth being the lowest. The payments are only made for the instruction of students of the artisan or weekly wages class, and those whose incomes are less than 10*1/2* per annum. The teacher to be qualified to earn payments on results must have taken a first or second class, unless he has obtained some University degree. The examinations are held in May. The examination in each subject is held over the whole kingdom on the same night. It is not necessary to enable a class to be examined and obtain prizes, &c., that a teacher should be certified. If a satisfactory committee be formed, any class or single student can be examined however taught. Prizes, which, with some few restrictions, are open to all students, are given to those who obtain a first, second, or third class. To the best in each subject are given a gold, a silver, and two bronze medals. Six Royal Exhibitions of the value of 5*1/2* per annum, tenable for three years, are given in competition at the May examinations. Three of these are to the Royal School of Mines in London, and three to the Royal College of Science in Dublin. Free admissions are given to the courses at these institutions to all who take gold medals.

With regard to the establishment of science classes in elementary schools, it is provided that the managers of an elementary school under inspection can permit their premises to be used for science teaching provided that there be no interference with the primary purpose of the elementary school or its three attendances. A science class may thus be formed in connection with and receiving payments from the Science and Art Department. But no payments are made

to teachers on account of science teaching in respect of any instruction in science that may be given during the three attendances of an elementary school not under inspection, and, therefore, not receiving State aid to elementary instruction, science classes may be formed in connection with the Science and Art Department, without any restriction as to the time or manner in which the instruction in science may be given.

## THE TRADES UNION COMMISSION—THE REPORT.

The report of the Special Commissioners deputed by the Royal Commission on Trades Unions to enquire into outrages, &c., in Manchester and the adjacent districts has just been issued. It is difficult to imagine any form of words which could in so short a space, and in so clear a manner, state all the evils and iniquities of the Trades Union system. A considerable number of violent personal outrages upon non-Union masters and men are reported, chiefly by the bricklayers' and brickmakers' Unions, and the Commissioners report that they were all deliberately planned and executed in furtherance of a system which had for its object the subjection of both masters and men to the rules of the Union, and the destruction of freedom of labour; that sometimes a resolution was passed that the outrages should be committed, but whether that happened or not, the opinion of the

notorious is the fact, that it will be possible to find collieries at which there are returns of the quantities sold into boats, and the actual quantities which these boat-loads really represent. The difference is in every such case of actual comparison much against the vendor and in favour of the vendee. But at a time of good trade, if they should be brought up to the colliery wharf, they are refused to be loaded till the boats of lesser dimensions are supplied. In one case a boat purported to hold about 25 or 26 tons; but the experienced eye of the proprietor soon detected that it really held very much more, and he quickly told the boatman he would take care he did not leave the wharf without his proper load. The boat was unloaded into two other boats, which after, by the gauge, revealed that the fellow had been supplied with 38 tons, whilst he was only expected to pay for 25, and yet he had been dissatisfied. The present time of bad trade has called out these large boats again, in larger proportions than heretofore, but it happens that the thick coal is, by its increasing scarcity, becoming very valuable, even in South Staffordshire itself. More objection than heretofore, therefore, is being raised by proprietors and butties to the practice. The chartermasters allege that the boats that are now coming to the collieries will carry nearly double the quantity that a fair boat will hold, yet they have been so artfully constructed that they will gauge for only a few tons more.

Colliery proprietors and chartermasters are, therefore, taking steps in certain instances to weigh the coal into the boats. We should be glad to hear of the practice becoming universal. It is high time that it was adopted. Our mineral wealth is of too much value, and the exports incidental to its winning too heavy, for colliery proprietors to be able to afford either to give away willingly or to be defrauded of their property. The proper method—that of weighing the coal—if it should be once adopted in South Staffordshire, would put an end to the difference in the returns of the aggregate mineral product of that part of the kingdom—one which, in respect of the quantity raised, stands third upon the list of the 14 coal-producing districts of England, Wales, and Scotland—and thereby materially assist in the accuracy of coal returns.

#### PRUSSIAN MINING AND IRONWORKS COMPANY.

In the *Mining Journal* of August 24 last a short notice appeared, translated from the *Berliner Boersen Zeitung*, which gave some account of the then state of the works at the collieries and ironworks of the above-named company. Since that time considerable progress has been made, and important results achieved, which cannot fail to stamp the undertaking as an eminently successful one. The following particulars (contained in a letter dated Düsseldorf, March 17) may be relied upon as correct, having been obtained from the best informed sources. At the Erin Colliery, near Castrop, one of the two shafts reached the surface of the coal measures at a depth of 112 fms., in the month of November, and is now sunk to a total depth of 135 fms., at which level the upper set of stone drifts has been commenced, and four seams of coal, varying from 24 to 62 in. in thickness, have been already cut through, dipping at an angle of about 50° to the northward. The second shaft is being rapidly sunk to the same level, and is already nearly 70 fms. deep. The construction and erection of the permanent engines for winding coal and pumping is so far advanced that it is expected all will be ready for coal work by the end of June next. As the workings in this colliery will extend over the best coking coal seams in the district, it is intended to build a large number of coke ovens on the colliery ground.

At Hansa Colliery, near Dortmund, where, at the time of the last notice, the great difficulties of the shaft sinking had just been overcome, the coal measures were also reached in the month of January at a depth of 76 fms., and since then two seams of superior gas coal have been sunk through, 3 ft. and 3 ft. 4 in. thick, lying at a very flat angle (about 7°), and thus establishing the fact that this colliery is situated nearly in the centre of a very wide basin of flat-lying coal, and that the seams which have been met with belong to the highest of the Westphalian formation, and consequently have all the other seams of the district below them.

At Zollern Colliery, where the operations had not been commenced in August last, the attempt to save the shaft, which had been abandoned by the former company in consequence of the enormous quantity of water met with in the sinking, has also been crowned with complete success within the last few days. The shafts have been sunk to a depth of about 32 fathoms, when the water feeders then became of such a large size—being upwards of 600 cubic feet, or about 4000 English gallons, per minute—that the company to which the colliery belonged failed to complete the winning, and, their funds becoming exhausted, they suspended operations in September, 1859. The colliery, upon which a very large amount of money had been expended, attracted much attention afterwards, owing to differences of views among the body of the shareholders, and was the subject of much discussion and correspondence in the *Mining Journal* as well as other papers about five years ago, when an attempt was being made to raise new capital and complete the works. The opinion was advanced by some parties that, if the colliery were to be taken up again, the present shafts and works should be entirely abandoned, and a new winning tried in a different place. Ultimately, the property was purchased by the Prussian Mining and Ironworks Company, on very cheap terms, and they have now succeeded, as already mentioned, in completely shutting off the water in one of the shafts; and as there is only a further depth of about 30 fms. to be sunk to the coal measures, it is likely that the colliery will be at work before the end of the present year. This winning being one of considerable interest in a professional point of view, some particulars relating to it will be given next week, which may be acceptable to the readers of the *Mining Journal*.

#### THE RICHARDSON PROCESS OF IRON PUDDLING.

The RICHARDSON invention of Puddling Iron, as at present carried out by the aid of hollow rabbets instead of solid, through which a stream of cold air is forced (as more fully described in No. 1685, &c., of the *Journal*), is getting into favour as its results are becoming more generally known. The process, we are informed, has now crossed the Tweed, and before long there are pretty clear indications that it will have crossed the Atlantic. The fame of the invention has also reached France, Belgium, and Sweden, and other foreign makers and Governments are enquiring after the secret. At Jarrow, the Messrs. PALMER have made a successful trial of the virtues of the tubular rabbet, and, though under temporary and incomplete arrangements, the puddled bars produced exceeded their expectations. The Whittington Iron-works Company, Staffordshire, have had the puddled slabs drawn out into thin rods, which satisfied them that the iron was of superior quality; and two ingots are now being drawn out into wire by the White Cross Wire Company, at Warrington. At the Parkhead Forge, Glasgow, the acting partner is attaching the process to the whole of his puddling furnaces, after a most cautious and prolonged trial of the system, in the faith that it will realize continuously the result of his protracted experiments; and the enterprising proprietors of the Blocham Works are this week testing it, with the view to its adoption.

At a time, then, when disquieting "rumours" are afloat about other countries outrivalling us in the economical manufacture of finished iron and its products, it is of the first moment—if we would lead the van—that every practical appliance which can cheapen the manufacturing process, or add to the quality of the article, should be eagerly and honestly tested, lest our apathy be taken advantage of by our Continental or American neighbours, and we be deprived of the full value of our own inventions. Mr. RICHARDSON is too much of an Englishman not to desire that the first fruits of his genius should be reaped by his own countrymen; and we have his authority for saying that he will be happy to arrange with ironmasters for testing his process for a limited period, free of charge, as he is fully assured that it will demonstrate its utility over the present method of puddling, by increasing the commercial value of the iron produced. It may be added that the cost of the experimenting apparatus, at works where there is an existing cold blast-engine, would only be a few shillings, and could be applied without interfering in any way with the ordinary puddling-furnaces, or with the routine of the work for an hour. At Jarrow, a piece of ordinary gas-pipe, and a few yards of gutta percha tubing, were improvised for the occasion, with the best results.

Judging, then, from the above-noted extended experiments, and

the subjoined chemical analyses, the RICHARDSON process claims to make a more pure iron from inferior than was formerly obtainable from superior pig-iron—the iron giving a fully better yield; is more uniformly good; saves 120 to 160 minutes per day in the working; lessens the labour of the junior puddler; requires less constant supervision; and in no way injures either the fettling, the furnace, or the rabbets, beyond the ordinary tear and wear.

From the following analyses, made by men of eminence—Prof. MACADAM, of the Royal College, Edinburgh, analysed for Mr. RICHARDSON; and Mr. TOOKEY (Dr. PERCY's assistant) was employed by the Lowmoor Company,—the greater purity of the RICHARDSON-made iron is evident:—

RICHARDSON'S PROCESS.		LOWMOOR IRON.	
Name of element.	Square bar.	Round bar.	Lowmoor Iron.
Iron	99.569	99.648	99.372
Carbon	0.035	0.031	0.016
Silicon	0.076	0.075	0.122
Sulphur	0.025	0.028	0.104
Phosphorus	0.031	0.034	0.106
Manganese	trace	trace	0.280
Total	99.736	99.816	100.000

Of the tensional power of plate iron fabricated under this process, Mr. BEARDMORE, of Parkhead Forge, Glasgow, had it tested in NAPIER'S works, when it stood a strain of 27 tons to the square inch in the direction of the fibre, and 23.7 across the fibre. One of the first consignments of plates has been to a foreign Government, and Mr. BEARDMORE is sanguine that they will realize all his hopes of their superior excellence.

On Jan. 15 last an elaborate paper was read by Mr. DAY, C.E., of Glasgow, on the advantages of this process, before the Institution of Engineers in Scotland. After the reading of the paper a very learned discussion ensued, turning on the enquiry, *how* was the sulphur and phosphorus eliminated by the RICHARDSON process? A question of this kind does very well as a *cheval de bataille* for a learned society, but for all practical purposes it is valueless. One point, however, was fairly conceded, that the iron *was* superior; and, while leaving these gentlemen to prosecute their scientific investigations into *how* the obnoxious elements are removed, it must be satisfactory to the patentee to know that his invention is making way.

#### STATISTICS OF COAL.

The Blue Book just issued, containing reports of Her MAJESTY'S Secretaries of Embassy and Legation respecting Coal, comprises accounts of the Belgian coal production, coal in China, coal in Japan, the Prussian coal production, the Wurttemberg coal consumption, and of the Zollverein coal. In Belgium there were 174 coal mines at work, and 112 idle; the amount of coal obtained being 12,774,662 tons, of the value of about 6,000,000Z. The Belgian coal industry is at present very prosperous. The net profit per ton was 1 fr. 97 c. in 1866, against 73 centimes in 1863, and the wages paid to pitmen has risen 23 per cent. within the last two years. With reference to the exhaustion of the coal mines, a subject to which attention has been turned in Belgium, no less than in England, the result of examination has removed the disquietude that had been entertained by many.

With regard to coal in Brazil the report is extremely unsatisfactory. The memorandum respecting coal fields in the province of St. Catherine's proves the coal, at least as far as already seen, to be of little commercial value. There is one 8 ft. seam, but the other four vary from only 1 1/4 in. to 14 in.; whilst with regard to the quality of the coal, it leaves nearly half its weight (443 per cent.) of ash, and only contains about 37 per cent. of fixed carbon.

In China, coal has been discovered at Pong-hou, the chief island of the Pescadores. Mr. SWINHOE the British Consul at Amoy, writes that the coal will, no doubt, be the same that occurs in layers under the New Red Sandstone, interior of Canton, up the river in this district, and at Kelung. Sir RUTHERFORD ALCOCK, at whose instigation the exploration reported on by Mr. SWINHOE was made, writes that the fact of their persistent refusal to give facilities for the effectual working of their almost unlimited coal fields, petroleum wells, and other sources of inexhaustible wealth, is the more significant that never was a Government more poverty stricken, or put to greater straits for money. In the event of a revision of the treaties next (the present) year, he is convinced that nothing is to be gained worth serious effort if the authority to work mines and the introduction of railroads and telegraphs be refused, and in the present temper of rulers and people such concessions are certainly not to be looked for from negotiations based on respect for the absolute right of the nation or its sovereignty to do as may seem best to themselves in the internal affairs of the country and the development of its resources.

In Japan, the coal mines at Iwana have been visited and examined by Mr. ERASME GOWER. He found the bed of coal from 4 to 6 ft. in thickness, consisting of very good bituminous coal, in places very pure, in others intermixed with slate, which is easily separated from it. The coal burns with a clear fire, makes very little ash, and does not choke the furnaces. The bed inclines slightly to the north-west, and is of such an extent as to be able to supply any demand made for many years. Its height above the level of the sea is about 290 ft., and the mouth of the main level is less than two miles from the sea shore.

In Prussia, the mineral industries appear to be progressing most satisfactorily. The quantity of coal to be obtained by the working of the coal pits of the River Saar would suffice for the supply of 3000 years, at the rate of 2,500,000 metrical tonnes per annum. The coal pits of the River Ruhr extend over 45 miles in length on the Lower Rhine. There were 65 strata of coal more than 20 inches deep, the united thickness of which gives a pure coal 210 feet. It has been estimated that the produce of these pits will last more than 5000 years, at the rate of 1,000,000 metrical tonnes per annum. In 1865 there were 409 pits at work in Prussia, producing 371,842,299 tonnes of coal, value 4,954,986Z.; they gave employment to 89,192 persons. Of the 409 pits in work, 393 were in the possession of companies and private persons, and 16 belonged to the State. Of the coal sold, 28 per cent. went to the interior, 22 per cent. to the States of the Zollverein, 45 per cent. to France, and 5 per cent. to Switzerland. Hanover possessed 33 coal pits. The more considerable fields of brown coal were in the provinces of Saxony and Brandenburg. In 1865 there were 511 of these pits at work, producing 710,437Z.

By way of appendix, reports are given upon the production of coal in Tasmania and in Trinidad, and upon the coal resources of British India. In Tasmania workings have been successfully opened on the north end of the Douglas River coal field. Coal of good quality for steam purposes has been discovered on the east coast of South Branch Island, at Adventure Bay; and a bituminous coal of fair quality has been discovered near Hamilton. Coal deposits are reported in Trinidad; the finest quality was found at Point Noir; it burnt rapidly, with much flame, and little smoke.

The report of Dr. THOMAS OLDHAM, the superintendent of the Geographical Survey of India, is very complete. He shows that the British territories cannot be considered as either largely or widely supplied with coal. Extensive fields existed, but they were not distributed generally over the districts of the Indian Empire. Up to the present time little more than surface workings had been carried on. Specimens of coal from 74 localities showed that the average composition per cent. was—fixed carbon, 52.2; volatile matter, 31.9; and ash, 15.5; against an average composition of five English specimens—of fixed carbon, 68.1; volatile matter, 29.2; and ash, 2.7. He states that the very best coal of the Indian fields only touches the average of English coals, and that Indian coals are not capable of more than two-thirds, in most cases not more than one-half, the duty of English coals. These results of the quality of Indian coals would show the groundless nature of the hopes which have been expressed that the coal fields of India, Borneo, Australia, and New Zealand would not only contribute large supplies, but would also serve to coal the ocean steamers trading between Europe and those far distant regions. As far as Indian coal was concerned, Mr. OLDHAM feared it would never supplant the better fuel now obtainable elsewhere for ocean voyages.

**PIG AND PUDDLED IRON.**—The exports of pig and puddled iron from the United Kingdom made a considerable stride last year, having attained a total of 567,319 tons, as compared with 500,500 tons in 1866, and 547,641 tons in 1865. The exports declined last year to France, but

they increased to Prussia, the United States, and other quarters. The exports of pig and puddled iron will be seen to have decidedly increased during the last fifteen years, having amounted in 1853 to 333,585 tons; in 1854, to 293,432 tons; in 1855, to 291,776 tons; in 1856, to 357,326 tons; in 1857, to 422,086 tons; in 1858, to 363,143 tons; in 1859, to 316,376 tons; in 1860, to 342,566 tons; in 1861, to 388,004 tons; in 1862, to 444,708 tons; in 1863, to 466,423 tons; in 1864, to 465,985 tons; in 1865, to 547,641 tons; in 1866, to 500,500 tons; and in 1867, to 567,319 tons. The value of these exports was as annexed:—1853, 1,056,310Z.; 1854, 1,244,853Z.; 1855, 1,072,428Z.; 1856, 1,385,118Z.; 1857, 1,609,115Z.; 1858, 1,084,170Z.; 1859, 901,929Z.; 1860, 974,065Z.; 1861, 1,044,304Z.; 1862, 1,203,641Z.; 1863, 1,287,968Z.; 1864, 1,412,352Z.; 1865, 1,549,491Z.; 1866, 1,542,145Z.; and 1867, 1,660,026Z.

#### MINING, METALS, AND MINERALS—PATENT MATTERS.

BY MICHAEL HENRY,  
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Mr. W. R. DAWSON, of London, has specified a patent relating to the preparation of titaniferous iron-sand for smelting. In order to carry out this invention the patentee takes sawdust or wood, in small pieces or particles, and iron-sand, and mixes them together, using, if required, a small quantity of tar, to cause the sawdust or wood to adhere better to the sand. To this he adds a sufficient small coal, either with or without pitch, to cause the sawdust or wood, when heated in a retort or coking-oven to the point of converting the sawdust or wood into charcoal, to form an agglomerated mass, containing within it the titaniferous iron-sand. He prefers to wash the coal previous to its mixing with the above-mentioned substances, in order to free it from sulphur and other impurities. The substance produced in the manner above stated is then ready for the ordinary operation of smelting in a blast-furnace. The proportion of wood or coal employed in obtaining the above-named product may be varied according to the facilities of obtaining wood or coal respectively, and the quality of the iron eventually produced will greatly depend upon the larger proportion of wood to that of coal employed. If sawdust or wood in small particles alone be used, then the proportion would be in about 4 tons of wood to 1 ton of sand, with about 10 per cent. of pitch or tar; then for every ton of coal used in substitution for wood 2 tons less of saw-dust or wood in small particles would be required.

Mr. W. J. PUGHESLEY, of Llantarnam, has specified a patent for obtaining sulphuric acid from the refuse "pickle" or "liquor" used in wire and galvanising works. The refuse pickle or liquor, when no longer fit for use, is placed in a suitable vessel, and allowed to remain there long enough to permit such impurities as will settle at the bottom of the vessel to do so; the pickle or liquor will then become clear. The clear liquid is then conveyed into a leaden pan, placed on iron plates, with such brickwork as is necessary to support and protect the leaden pan, and, by means of heat, this is concentrated slowly until it has attained a specific gravity of about 1.250; after this the liquid is run into vessels, lined with lead, and allowed to remain therein four or five days to crystallise. The crystals thus obtained are sulphate of iron (commonly called copperas). The crystals are removed, and the mother liquor again put into a leaden pan, and allowed to evaporate as before; the liquid is then run into another vessel, and allowed to crystallise as before; after this, the liquid will be sulphuric acid, of a sufficient strength and purity to be used as pickle or liquor for the purposes above described, which it does as well and effectually as the ordinary mixture of sulphuric acid and water, although it is preferable, for regularity sake, to mix a portion of fresh sulphuric acid, as the latter alone would not be enough to constantly supply the requirements of the works.

Among recent applications for patents we note—Mr. A. C. KIRK, Glasgow, treating cast-iron.—Mr. E. CASPER, Cannon-street, supplying water to steam-boilers.—Mr. P. KOCH, Manchester, machinery for making metallic nuts.—Mr. J. JEAVONS, Sheffield, tyres for railway and other wheels.—Mr. E. MOREWOOD, Cheam, coating metal plates.—Mr. JONES, Consett Ironworks, finishing, straightening, and pinching rolled, railway, and other bars of iron and steel.—Mr. ATTWOOD, of Walsingham, producing steel and iron of a steely character.—Mr. THOMPSON, of Barking-road, iron castings.

#### REPORT FROM MONMOUTH AND SOUTH WALES.

MARCH 19.—Since last report there is little alteration to note in the Iron Trade of the district, but the feeling that the worst time has been experienced is being gradually strengthened, although it cannot be said that the stagnation which has so long prevailed has been relieved to any great extent. Quietness still characterises the home trade, and the improvement which was expected to have set in before this has not been realised, and this, no doubt, is the principal cause of the stagnation. The financial difficulties of the leading railway companies have kept many orders back; and until the public invest their money a little more freely, home contracts will be given out very sparingly. It is well known that the railway companies require considerable quantities of rails and other material, and the slight improvement which has already set in in the railway market has caused orders to be given out a little more freely, and for somewhat larger quantities. Considerable quantities of rails are now being shipped to the United States at the local ports, and vessels are wanted at Newport to convey iron to New York, New Orleans, Annapolis, Mobile, Dorchester, N.B., Port William, N.B., and Woolville, N.B. Enquiries, however, have somewhat slackened during the last few days, and this, no doubt, is owing to the state of political affairs in that country, the impeachment of the President, now in course of proceeding, having had a material effect on the trading community. It is not quite clear what the result of this step on the part of Congress may be, but until the present complications are in a fair way of being settled, buyers will enter into transactions only for what is required for immediate use. Shipments of rails will shortly be made to Riga and Cronstadt, and will be rapidly followed by others to the Russian markets, from which enquiries are considered favourable as to future requirements. A large contract is shortly to be given out, and although Belgian houses will use every effort to secure it, it is confidently believed it will come into the hands of makers in this district.

that 350, 18s. 1d. had been expended during the year 1867, as compared with 358, 13s. in 1866. The balance in the hands of the treasurers at the end of the year, including the interest on the sums invested, amounted to 28037. 2s. There are now remaining 13 widows, 23 children, and 7 aged parents recipients of the fund, involving a weekly charge of 5s. 16s. The weekly payments decreased during the year from 6s. 9s. 6d. to 5s. 16s., and the number of recipients from 50 to 43. The committee adopted the plan of giving dowries to the widows who marry, the result of which has been that out of 31 widows on the fund seven years ago only 13 now remain.

At the Ferndale Colliery Explosion Fund meeting, on March 4 (the Rev. Dr. Price in the chair), a very complete and satisfactory balance-sheet was presented and passed. It appears that the amount received has been 11,885. 11s. 6d., of which (during the 11 weeks ending Feb. 28) 3417. 2s. 6d. was distributed to 66 widows, 158 children, and 22 dependents; 2467. 18s. in advertising, travelling expenses, &c.; and 59s. to the honorary secretaries, leaving 11,247. 11s. to carry forward. Subscriptions promised, estimated at 5566. 19s. 1d., are not included in this account, so that the total subscriptions have been 17,452. 10s. 7d.

At the Monmouthshire Railway and Canal Company meeting, on Wednesday, Mr. C. Bailey, M.P., in the chair, the report was adopted, and a dividend at the rate of 5 per cent. declared. The Chairman said the dividend would have been 5½ or 6 per cent. but for exceptional circumstances. It was agreed to subscribe 20,000, towards the Newport Alexandria Dock as soon as 150,000 had been subscribed, including the 20,000. It was stated that only a portion of the entire dock scheme would at present be proceeded with, but that was not intended to abandon the larger undertaking. The estimated cost of the works now contemplated was 259,000, and the dock would cover an area of 13½ acres.

The arrivals at Swansea include—the Spring, from Genoa, with 203 tons of copper ore, for H. Bath and Son; Margaret Longton, from Carrizal Bay, with 335 tons of copper ore and 369 tons of copper regulus, for Cobre Company; Countess of Bective, from Cuba, with 540 tons of copper ore, for Richardson and Co.; Esmeralda, from Havanna, with 332 tons of copper ore, for Richardson and Co.; Africa, from Caldera, with 196 tons of silver ore, 163 tons of copper ore, and 391 tons of ditto, for H. Bath and Son; San Fernando, from Coquimbo, with 100 tons of copper in bars, for H. Bath and Son; Flora, from Hondeklip, with 400 tons of copper ore, for Richardson and Co.; Rebe, from Carloforte, with 370 tons of zinc ore, for H. Bath and Son; Courier, from Santander, with 350 tons of iron ore, to order; Sketty Belle, from Genoa, with 212 tons of copper ore and 40 tons of olive oil, for H. Bath and Son; Sonne, from Cagliari, 125 tons zinc ore, to order.

#### REPORT FROM NORTHUMBERLAND AND DURHAM.

MARCH 19.—The Coal and Coko Trades in Durham continue dull, with little animation, and consequently men are more plentiful than they have been for some years in this part of the district; it will, therefore, be readily understood that the men are rather eager to enter into the yearly engagements where they are to be had, and many of the collieries have engaged an increased number of hands in anticipation of improved trade shortly. The steam coal trade in Northumberland is rather more buoyant, and as the season advances there is little doubt that a good business will be done in this branch of the trade. A large quantity of steam coal will be taken from the Tyne, and other northern ports, this season by steam colliers, and those ships will return with cargoes of grain.

The Iron Shipbuilding Trade continues to improve, and the iron-works generally are gradually, although not rapidly, getting into full work. At the extensive works at Jarrow there has been a marked improvement lately, and the men in most branches are working full time. At the Cleveland Iron Market, on Tuesday, there was a good attendance, and large sales were effected in most descriptions of iron, and stocks are reported to be decreasing. The quotations were—No. 1, 47s. 6d.; No. 3, 43s. 6d.; No. 4, 42s. 6d., nett cash. No further information has come to hand respecting the making of steel from the Cleveland iron. The general tone of the market was certainly hopeful; there was a good demand for plates and angles, and the stocks of pig-iron are decreasing. Great satisfaction was expressed at the intelligence that the Stockton and Darlington Railway Company had given notice that the reduced rate for the conveyance of rails, &c., from the Middlesbrough district alongside ships in Liverpool had been agreed to, and would for the future be the rate charged. This arrangement places the Middlesbrough ironmakers, as regards rail-way charges, on a footing of equality with their Welsh competitors.

Economy in the use of steam is of the greatest consequence in connection with collieries, ironworks, &c.—that is, in the consumption of coal, oil, &c.; and in connection with this we may mention that "Storer's patent open-top suet lubricator" is to be introduced into this district. The makers of this simple and excellent lubricator are Messrs. Nettleford and Chamberlain, of Birmingham. It appears that the instrument has been already largely introduced into the Midland district, and, from excellent testimony, with the best results. It is given as the result of careful experiments that by this lubricator, as compared with those consuming tallow, a saving is effected of 70 per cent.—a very important item, and one well worth consideration. Mr. William Galloway and Co., of Gateshead, have been appointed agents for this lubricator, and careful experiments are about to be made, in order to determine its merits. The result of those experiments will be given when they are completed.

#### REPORT FROM SCOTLAND.

MARCH 19.—There has been a nice balancing of probabilities between buyers and sellers in our Pig-Iron market this week, and fractional changes have taken place, as the one or the other considered the market likely to be influenced in their favour. On Monday and yesterday there was a tendency to weakness, although a good business was done; and the same feeling pervaded the market to-day, when only a few sales were effected at 52s. 9d. cash, closing nominally at this price. No. 1, g.m.b., 53s.; No. 3, 51s. 6d.; Coltness, 59s.; Gartsherrie, 57s. 6d.; Summerlee, Calder, and Glengarnock, 55s.; Eglington brands, 53s. The shipments during the last two weeks are more nearly approaching those of the corresponding weeks of last year than the shipments of the previous months, and those to foreign parts are on an average of former years. The aggregate returns show 9940 tons sent foreign and coastwise from all the Scotch ports, against 11,430 tons in the same week of last year; but of this 6625 tons went direct to foreign countries, against 8145 tons in the corresponding week of 1867. The furnaces now in blast are 106, against 98 at the same date last year; but the cheapness of Cleveland iron is interfering both with our shipments and our home consumption. At a meeting of the ironmasters, this forenoon, it was agreed that in future each master should regulate, as he pleased, the number of furnaces in blast at the respective works; and this liberty has been given, it is understood, with the view of putting a number of the furnaces out of blast into immediate operation. It finished iron there is not a single new feature to report, either in price or demand. Parkhead plates, 8s. to 17s., in which range of prices are included those manufactured out of iron puddled by the new "Richardson process," a notice of which appears in another column. Heavy forgings (Parkhead forge) are quoted at 75s. per cwt. The other descriptions of iron are without change. At a public meeting, held in Edinburgh last week, the General Secretary to the Ironmoulders of Scotland gave a lengthened history of their lock-out. This official stated that "Within the past year 23,000 men had been locked out by this Union, not a penny of which had been paid as strike money. They had plenty of funds, and were not likely soon to be crushed. The only way to effect a settlement of the present struggle was by referring the dispute to arbitration or to a conference." The meeting was brought to a close by pledging support to the ironmoulders until their case was brought to a successful termination. Notwithstanding this resolution, and the very prosperous state of their funds, the lock-out is all but a thing of the past.

Coals have had to undergo another reduction of 6d. a ton this week, and can now be purchased at 3s. per ton at the pit's mouth, or from 5s. 6d. to 5s. 9d. f.o.b., in the Clyde, or at Port Dundas. This deplorable depression is, to some extent, attributable to the fact that a number of our ironmasters—in the present state of the iron trade—have become coalmasters, and are selling in the ordinary way coals which in more prosperous times would have been all consumed by themselves. In these circumstances, the already too low wages of the collier will have to undergo a still further reduction, if worse calamities are to be staved off; as, we regret to learn, a pretty general feeling prevails amongst coalmasters to still further circumscribe their operations, by shutting up pits in all the mining districts in Scotland, unless the action of the ironmasters to-day prevent it.

While coalmasters are thus puzzled as to how they can keep their hands employed at a loss, miners have this week held meetings at Maryhill, Inchinnan, &c., to support members in the district out of strike. Meetings have been held at the Wishaw, Hamilton, Ayrshire, and other districts for a like purpose, but it were needless to fill up the paper with details of this sort. During the week the shipments of coals from the Scotch ports amounted to 16,215 tons, against 11,215 tons in the corresponding week of last year, which shows a considerable increase. There is a continuation of emigration from the Fife, Lanark, and Ayrshire coal districts, but not to any large extent; only some of the most respectable of the class have been persuaded to leave, we are afraid, under false pretences.

At the Glasgow Geological Society various papers of importance were read. Mr. Thomson stated that spines of the *Gyracanthus* occur in the roof of

the "splint" coal at Shettleston, associated with other spines belonging to *Ctenacanthus* and *Pleurocanthus*; it also occurs in the same bed at Newton, Cane, Buslang, along with these spines and with the palae tooth *Pleuroodus*; and in the Airdrie blackband ironstone he had found it in company with *Megachthys Hibberti*, *Rhizodops*, *Rhombptychius*, and with *Strepsodus*, *Ctenoptichius*, and *Pleuroodus*.

Mr. J. Wallace Young read a paper entitled "Miscellaneous Notes on Chemical Geology." In a trap dyke at Fairlie a white crystalline carbonate of iron, lime, and magnesia is found, which contains some very small brownish-black crystals. Separating a small portion of these, and applying suitable tests they were found to consist of sulphide of iron and zinc; no carbonate of zinc was present. A portion of the trap-rock from the dyke itself was tested carefully for zinc, but none was found. Sulphide of zinc is only rarely found disseminated through such rocks as basalt, dolomite, &c. A deposit from a chalybeate water was described as consisting of hydrated oxide of iron, with a little clay and sand mechanically intermixed. The only peculiarity observable was the absence of lime salts.

#### REPORT FROM DERBYSHIRE AND YORKSHIRE.

MARCH 19.—There is no alteration in the Coal or Iron Trades in the North Derbyshire district, both being characterised by more than usual dullness. The demand for coal to London and the South has fallen off considerably, the quantity sent from Clay Cross for February showing a diminution of 5000 tons when compared with the previous month. At Church Gresley and the district the efforts of Mr. Bass to bring about a settlement between the employers and the men who have been out so long having failed, it would appear as if the latter will have to leave the neighbourhood, seeing that the collieries have as many men as they require.

In the neighbourhood of Sheffield and in South Yorkshire there are indications of improvement at several of the ironworks. At Elsecar the rail-mill has commenced working, whilst the puddlers and others are better employed than for some time past. Most of the furnaces are in blast, so that stocks of iron are large. The demand for coal, both for house and steam purposes, continues very dull. The business doing to London in particular has fallen off considerably, so that most of the collieries, including those of Earl Fitzwilliam, are on short time. To Hull and Grimsby a moderate trade is being done, and rather more from the port of Goole.

An important meeting of the principal colliery owners in South Yorkshire was held on Tuesday, at the King's Head Hotel, Barnsley, for the purpose of taking steps to have the present rate of the Great Northern Railway to London and other places reduced to a point which would enable them to compete with the sea-borne coal, which they were unable to do at present; and the action taken by the coal owners is warmly seconded by the London merchants, who are deeply interested in the matter. It was agreed that the Board of the Great Northern should be communicated with, and it is to be hoped that the present rate will be modified, seeing that, unless such is done, not only the colliery proprietors but the railway itself will be the sufferers. The demand for coke continues good, considering the depressed state of the iron trade, so that stocks are not allowed to accumulate.

At the Oaks Colliery matters remain without much alteration, the men being very busily engaged in clearing the road between the downcast and upcast shafts, so that there is not much likelihood of any of the bodies being reached for some time to come.

The recent attempt made by Mr. Bass, M.P., to bring the disagreement between the colliers of South Derbyshire and their employers to a termination having failed, for various reasons, it may now be assumed that the men at present will have to find work in other quarters. At nearly all the collieries at which the lock-outs were formerly employed there were fully as many non-Unionists at work as are required, and in some instances more, so that short time is now pretty general. The Union movement, for the second time in 12 months, has thus been signally defeated in Derbyshire, after causing a great deal of privation and suffering, and sending a great deal of the trade into other districts, and which it will doubtless take months to recover. Since the commencement of the struggle the men must have lost in wages upwards of 25,000, which would represent coal of the value of more than 100,000. In addition to the loss of wages thus sustained, several of the Trade Unions have spent large sums in maintaining the men and their families. Foremost amongst those societies may be mentioned the South Yorkshire Miners' Association, which during the struggle forwarded to Church Gresley upwards of 4000, and which has been expended without in the slightest degree forwarding the Union movement. It may be said that the only point in dispute was as to the employment of persons at the collieries who were connected with any Union. After the failure to compel the Staveley Company to employ Unionists in their mines, the attempt was made to carry out the principle in South Derbyshire, but the colliery proprietors, amongst whom are the Earl of Chesterfield and the Marquis of Hastings, resolved on no account to employ persons who were members of the Miners' Association. They have now carried out their determination to a successful issue, but at a great loss to themselves, so far as trade is concerned. The dispute may now be said to have terminated, leaving between 300 and 400 men out of work, and whose services are now not required in the district.

STRIKE AND LOCK-OUT AT SALTAIRE.—A late edition of the *Leeds Evening Express* of last night states that, in respect to a strike and lock-out at Saltaire, near Bradford, Mr. Titus Salt, jun., has announced that, having enquired what other firms were doing, his firm was prepared to increase their rates of wages, and that it was probable work would be resumed on Monday morning.

#### EXTRAORDINARY CASE OF MINE TRESPASS.

The following important case was heard at the Staffordshire Lent Assize Court on Saturday before Lord Chief Baron Kelly:—

**FLETCHER AND OTHERS v. MILLS.**—This was an action for mine trespass. Mr. Powell, Q.C., and Mr. H. James, appeared for the plaintiffs (instructed by Mr. Brooke Robinson, Dudley), and Mr. Gray, Q.C., and Mr. Griffiths (instructed by Messrs. Bernard and King, of Stourbridge) for the defendant. The facts of this case were of a very extraordinary character. The plaintiffs are four in number; three of them—Emily Fletcher, Thomas Bell Elcock Fletcher, and John Aston—are devisees and executors of the late Mr. T. Badger, and the fourth plaintiff is Mrs. Eliza Green, sister of the late Mr. Isaac Badger. The Badgers were a firm of gentlemen who carried on an extensive business as mine owners in the county of Stafford, and some years ago they were possessed of some mines forming the subject of the present action, and called the Old Hill Mines, in the parish of Rowley Regis. The defendant had entered four pleas. First, not guilty; second, mines not the plaintiffs'; third, the coal not the plaintiffs'; fourth, he pleaded the statute of Limitations. Adjoining these mines were other mines, belonging respectively to Messrs. Hall, Holcroft and Co., and to the defendant. The trespass for which it was now sought to recover damages was not committed by directly working into the plaintiffs' property; for owing to the position of the mines the defendant had first to cut through that of Messrs. Hall, Holcroft, and Co., and thence into that of the plaintiffs'. For the trespass upon the mine of Messrs. Hall, Holcroft, and Co. proceedings were taken, and an action for damages was to have been tried at the Assizes, 1867, but before the case was decided on an arrangement was made between the parties, and the action was determined without being submitted to a jury. The defendant on that occasion agreed to pay 2000, and all costs for the coal so taken from Hall and Co., amounting, as was alleged, to 25,000 tons. From the proceeding then taken, however, the fact oozed out that the defendant had not only worked the mine of Messrs. Hall, Holcroft and Co., but that he had done so in order that he might work the mines of the plaintiffs'. That being so, application was made to the defendant for permission to inspect his mine, but he represented, with assumed regret, that he could not at that time accede to their application, the fact being that at that time the mine was in such a state—whether purposely or accidentally it could not be stated—that it was impossible the inspection could take place. The defendant was then asked to show his maps; but he declined to do so, and that rendered necessary an application to a learned Judge in London for an order to inspect the mine, maps, books, &c. That order was also granted, and the defendant so far complied with it that he produced the maps and books; but the former were so covered up that they showed only an extremely narrow slip, forming the boundary line between his own and the plaintiffs' colliery. The defendant, however, having worked into the plaintiffs' colliery, the portion of the map exhibited was useless for the purposes of the inspection; and as he refused positively to show anything but the boundary line in question, a second application had to be made to the Judge in London, who peremptorily ordered that the whole of the plans should be open to inspection. That order was granted on Jan. 30 last, but it was only since the opening of the Assizes that it had been complied with, and the plaintiffs had been enabled to make the necessary inspection. Now evidence was laid before the Court to show that since the trespass was first committed the defendant had worked the plaintiffs' mine, in the upper part of the thick coal, to no less an extent than 1659 square yards, 5 yards thick, which represented 5728 tons, and which valued at 5s. per ton, penalty price, amounted to 13197. 10s. There were left under foot 1809 square yards of bottom coal, which Mr. Henry Johnson, of Dudley, one of the mining engineers who inspected the mine, said was so damaged that it would hardly be worth the cost of getting. Of this thin coal it was estimated there was left 4603 tons, and as this may not be worth getting, a claim was also made for the amount of the royalty and profit of 2s. per ton, which amounted to 4661. 10s.

There was another item in plaintiffs' claim of 1161, for injury done to the surface of the land, and to three cottages, making a total claim of 18661. Mr. Johnson said on Nov. 1, 1867, he in company with Mr. David Peacock, of Tipton, and William Turner, went down to ascertain the trespass, but the roof had, he thought, been purposely thrown in the night or day previously, a chamber twice as large as that court being completely choked up with the fallen debris, and so entirely prevented the inspection sought. The gentleman who was the defendant's mine surveyor in 1867, Mr. Thomas Millership, jun., distinctly stated in evidence that Mr. Mills asked him not to show on the plans that he had worked beyond his own boundary. Mr. Millership's reply was that he should put his stamp upon the plan just as he found them in the pit, and he appears to have done so. He produced (under his subpœna) the plotting plan of defendant's workings, which showed the trespass of 1659 square yards. He added that he several times remonstrated with the defendant, recommending him not to run the risk of the trespass, as if he was found out it would ruin him. Defendant answered "Oh! it will never be found out," but Mr. Millership declined to have anything to do with the matter. The defendant told him he did not want him to have anything to do with it, but that he wanted to make the pit last as long as he

could. The witness, at the request of Mr. Powell, read some entries from his note book confirming his previous statement which seemed to astonish both Court and Jury. He said the coal taken was of excellent quality and six yards thick. It appeared also that when the inspection of the mine on behalf of Messrs. Hall, Holcroft, and Co. was made, a dam was put up at the entrance to the gate-way of the working leading into the adjoining mines in order to conceal the trespass. Witness remembered Mr. Henry Johnson, of Dudley, Mr. Peacock and Mr. Turner coming down the pit on Nov. 1 last to inspect; but the roof was all in then, and they could not see anything except the "shut" or rock. These were the chief facts of the plaintiffs' case, and to them the only answer made by the learned counsel for the defendant was that he was instructed that Mr. Mills did not admit that the trespass was committed with his knowledge, though he, at the same time, disavowed any intention of imputing that Mr. Millership had stated that which was false. The question, therefore, resolved itself into one of damages. The learned Judge, in summing up the case, significantly remarked that it was one of the most extraordinary and lamentable cases that he had ever heard in a Civil Court, and one that ought to have gone into the Criminal Court. The defendant had hitherto and clandestinely—he would not use any other term though he might do so—made his way through the mines of other proprietors into the mines of the plaintiffs, and from thence, in the short space of three or four months, carried off a quantity of coal which, allowing a liberal reduction for expenses, had been estimated at 13197. 10s. He directed the jury, however, that they must not allow any indignation they might naturally feel at the defendant's conduct induce them to aggravate the damages by 1s.; but he subsequently added (in reply to a question from the jury) that he was bound to them in law that the plaintiffs were entitled to the value of the coal at the pit mouth, and that if they awarded 1d. less they would be doing a great injustice. The jury, after two hours' consultation, returned a verdict for 18651. 15s., as against 18661. The amount claimed by the plaintiffs, and in consequence of which they handed into the Court the Judge ordered execution to issue in four days.

UNFENCED SHAFTS.—A COLLIER PROPRIETOR FINED 30L.—At the West Bromwich Police Court, on Monday, George Richmond, colliery proprietor, was summoned at the instance of Mr. Baker, Government Inspector of Mines, for having in January last unlawfully left three shafts of coal pits in his colliery in Bromley-lane, Brierley Hill, not properly fenced, so as to be a danger to the public.—Mr. Baker said that the shafts of the pits in question were very improperly fenced, one of them only having a piece of railing over the top of it. The defendant pleaded guilty to the three charges.—Mr. Spooner said the lives of the public had been so endangered by colliery proprietors not fencing the shafts that they did not use that he was obliged to exercise his own jurisdiction very strongly. He knew from his observation that there were many pits now that were not properly fenced round, but they must be so, and it must be done well and properly. He then fined the defendant 10s. in each case.—Mr. Richmond afterwards asked the stipendiary to mitigate the penalty, but he replied that he could not. He had hoped that the fact of one or two cases of a similar character being brought before him would have put a stop to the practice. One gentleman he had fined 30s. for a similar offence. People must use their property so as not to be an injury to others. He would willingly reduce the penalty if he could, but he dared not, for if he did other persons who were brought before him would say that he had reduced Mr. Richmond's penalty, and would ask that theirs might be reduced also.—The 30s. were then paid by the defendant.

AN IMPROVED SAFETY-CAGE.—An invention has recently been patented by Mr. BELLHOUSE, of Rochdale, which consists of an arrangement of wedges, or inclined serrated pieces of malleable iron, capable of sliding between projections on the cage and the ordinary guide-rods, such wedges being brought into action by means of weighted levers and powerful springs. In case of the breakage of the rope the weighted ends of the levers fall; the serrated wedges are at once pushed up between a wrought-iron stud (which is firmly fixed in a strong wrought-iron angle fixing) and the guide-rods, the result being that the serrated wedges become firmly blocked against the guides, and effectually prevent the further fall of the cage, no matter how heavily laden. The apparatus is so arranged as to be quite under the control of the man inside the cage, for by simply pulling an overhanging chain the descent of the cage can be stopped in a moment.

WOOD AND BAILEY'S PYROMETER.—Mr. WOOD, Tees Ironworks, Middlesbrough, has invented a new pyrometer. It is manufactured by Messrs. Bailey and Co., Salford, and is designated "Wood and Bailey's Patent Pyrometer." The instrument may be briefly described—a metal tube the metal being especially adapted to the purpose—is connected at one of its ends to a pillar of porcelain. The other end communicates with a dial, on which the degrees of temperature are duly marked. When the instrument is held over the aperture of a blast-furnace pipe, so as to allow the hot air to pass through the tube, the heat causes an expansion of the metal, and the length of the tube is thereby increased. The difference thus made in the length of the tube is compared with that of the

**THE PEMBROKE SLATE COMPANY (LIMITED).**—Notice is hereby given, that it is intended that a GENERAL MEETING of this company will be HELD at the Black Boy Hotel, Long-row, in the town of Nottingham, on FRIDAY, the 3d day of April, 1868, at Four o'clock in the afternoon, to confirm the special resolution which was passed at a general meeting of the company on the 13th day of March, 1868, of which a copy is hereunder written.

Nottingham, 16th March, 1868.  
H. E. HUBBART, Liquidator.

COPY OF RESOLUTION.

Resolved.—That no further calls shall be made upon the shareholders, either to equalise their contributions *inter se* or otherwise; and that the balance of money in the liquidator's hands shall be paid over to Mr. Frederick William Parsons upon the execution of a release from him and Mr. William Parsons, who together are the holders of 2000 shares, upon which £1 per share has been paid, and upon which they have a right to be recouped the difference between £1 per share and such smaller sum as may have been paid by the other shareholders.

**THE ALAMILLOS COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at half-past Two o'clock P.M.

To receive the accounts and balance-sheet, with reports from the directors, auditors, superintendents, and mining agents, for the half-year ending 31st December, 1867.

To elect three directors, two in the place of J. P. Judd and John Taylor, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; and one in the place of the late James Crosby, Esq., who is eligible, offer himself for re-election.

To appoint two auditors for the ensuing year: John Robinson Peill, Esq., is eligible, and offers himself for re-election; Henry D. Abercrombie, Esq., who is also eligible, offers himself for election.

And for general business, as authorised by the Deed of Settlement.

A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.

By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, March 18, 1868.

**THE LINARES LEAD MINING COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at Two o'clock P.M.

To receive the accounts, balance-sheet, and reports of the directors, auditors, superintendents, and mining agents for the half-year ending 31st December last.

To elect four directors, three in the place of John Addis, William Henderson, and Charles Morris, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election; and one in the place of the late James Crosby, Esq.; Robert Henry, Esq., who is eligible, offer himself for election.

To appoint two auditors for the ensuing year: Robert Palgrave and J. R. Peill, Esqrs., who are eligible, offer themselves for re-election.

And for general business, as authorised by the Deed of Settlement.

A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.

By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, London, March 18, 1868.

**THE FORTUNA COMPANY (LIMITED).**—Notice is hereby given, that the HALF-YEARLY GENERAL MEETING of the shareholders in this company will be HELD at this office, on THURSDAY, the 26th inst., at Three o'clock P.M.

To receive the accounts, balance-sheet, and reports of the directors, auditors, superintendents, and mining agents for the half-year ending 31st December last.

To elect four directors, three in the place of Charles Morris, John Phillips Judd, and John Taylor, Esqrs., who go out of office by rotation, but who are eligible, and offer themselves for re-election, and one in the place of the late James Crosby, Esq.; Robert Palgrave, Esq., who is eligible, offer himself for election.

To appoint two auditors for the ensuing year: James T. Dorrington, Esq., is eligible, and offers himself for re-election; Charles Roberts, Esq., who is also eligible, offers himself for election.

And for general business, as authorised by the Deed of Settlement.

A copy of the directors', superintendents', and mining agents' reports, and of the balance-sheet and accounts, is forwarded herewith.

By order of the Board, H. SWAFFIELD, Secretary.  
No. 5, Queen-street-place, Upper Thames-street, London, March 18, 1868.

**THE PESTARENA UNITED GOLD MINING COMPANY (LIMITED).**—Notice is hereby given, that the FIRST ORDINARY GENERAL MEETING of the shareholders in this company will be HELD at the City Terminal Hotel, Cannon-street, in the City of London, on MONDAY, the 5th day of March, 1868, at Two o'clock P.M. precisely, to receive the accounts, balance-sheet, and report of the directors, auditor, managing director, and chief captain of the mines.

To re-elect retiring directors, and for general business.

The Transfer Books will be closed 23rd March, and re-open 6th April, 1868.  
Offices, 9a, Great St. Helen's E.C.

J. C. GOODMAN, Secy.

**NOUVELLE MONTAGNE COMPANY.**—THE GENERAL MEETING of the SHAREHOLDERS will be HELD at the Hotel d'Angleterre, Liege, on SATURDAY, the 18th of April next, at One o'clock P.M.

The Director-General of the Company, V. BOUILLON.

**MOSQUITO AND POYASIAN LAND SECURITIES.**

At a PUBLIC MEETING of HOLDERS of these SECURITIES, held pursuant to notice on the 12th March, at 4, Westminster-chambers, W.M. PAGDEN, Esq., in the chair.

The following resolutions were passed unanimously:—

1.—That this meeting has heard with much satisfaction that there is reason to expect from the Government of Honduras a concession of land in that Republic on favourable conditions, and fully recognises the necessity of being prepared to take advantage of such concession at the earliest moment.

2.—That it is desirable that steps should be immediately taken to ascertain to what extent the holders of Mosquito Land Securities will be disposed to avail themselves of any agreement which shall be entered into with the Republic of Honduras, and that the benefits of such agreement, or concession, shall be limited to such holders as shall be or before May 12 next deposit with Captain Bedford Pim, R.N., at the offices of the Central American Association, 4, Westminster-chambers, their claims or securities.

3.—That Captain Bedford Pim, R.N., is hereby requested and authorised to investigate the various claims and securities, and to determine the number of acres to which each claimant is respectively entitled in virtue of his claim or security, and which decision of Captain Bedford Pim shall be binding and final, and without appeal.

4.—That in place of claims and securities brought in for registration, the Central American Association is hereby requested to issue certificates in the following form, under the seal of that company:—I, Capt. Bedford Pim, R.N., Chairman of the Central American Association (Limited), do hereby, in virtue of a resolution of a public meeting of the holders of Mosquito Land Securities, held on March 12, 1868, award and certify that the holder of this certificate is entitled to a claim of — acres of land in the original Mosquito Land Grants.

5.—That a subscription of 1s. 6d. per 1000 acres shall be paid at the time of taking up the certificates of award, the same to be paid to the credit of the committee.

6.—That all claimants who shall not have paid the said subscription of 1s. 6d. on or before June 1, shall be excluded from all participation in the benefits of the grants from the Honduras Government.

7.—That a meeting of the certificate holders shall be called (of which due notice shall be given), at which a committee shall be appointed to organise a company or association for giving due effect to any provisional agreements which shall be entered into by the existing committee with the Government of Honduras.

Now, NOTICE IS HEREBY GIVEN, that FORMS OF DEPOSIT AND REGISTRATION can be obtained at 4, Westminster-chambers, S.W., on personal application, or will be forwarded by post on receipt of stamped envelope.

C. FOX SMITH, Hon. Sec.

**SPECIAL NOTICE TO GOLD MINERS.**

Laurencetown, Feb. 25, 1868.

On the 12th inst. we had 7½ tons of quartz from a vein west of Gold Lake, in the Laurencetown District, Nova Scotia, crushed at a mill at Montague, owned, as we are informed, by Carlos Piero and others (who is now operating in the district in company with W. T. Townsend, G. B. Capel, and others). We received at the gross yield 1 oz. 13 dwt. 9 grs. retorted gold.

On the 26th inst. we had crushed at the mill of John Werner, Esq., Laurencetown, 1 ton from the same vein, but apparently much inferior in richness, and received as the gross yield 1 oz. 7 grs. melted gold, a difference of more than four to one against the Montague mill.

STRANGE AND GLASSON.

P.S.—Should the Hon. the Commissioner of Mines think proper to make formal enquiry into the disparity between the returns of the two lots, we are prepared to furnish the names of experienced miners who quarried and handled the rock, with their estimates of its value.—S. AND G.

Will be ready by the end of this month,

THE THIRD EDITION, SEVENTH THOUSAND,

HOPTON'S "CONVERSATIONS ON MINES," BETWEEN

"FATHER AND SON."

Revised, improved, and enlarged. Price 2s. 6d., or 3s stamps, free by post.

London: MINING JOURNAL Office, 26, Fleet-street.

THE GOLD MINES OF NOVA SCOTIA.

UNDER OFFICIAL PATRONAGE.

Now ready, price 4s. 6d.

A POPULAR GUIDE, OR HANDBOOK, FOR TOURISTS,

MINERS, AND INVESTORS, INTERESTED IN THE GOLD MINES

OF NOVA SCOTIA.

By A. HEATHERINGTON.

Author of "Compositore's Statistical Review," &c., &c.

Copies can be had at the MINING JOURNAL Office, 26, Fleet-street, London.

PEAT, PEAT FUEL, AND PEAT CHARCOAL,

HOW TO MANUFACTURE ECONOMICALLY,

By WILLIAM ELSAM.

Late Manager of the Blaen Pellenia Peat Charcoal Works.

Gratis on application to—

ELSAM and Co., 28, Upper Thames-street, London; 44, High-street, Bristol.

WILLIAM ELSAM, Palmerston Villa, Knowle, Bristol.

Or forwarded on receipt of stamp and address.

In the Court of the Vice-Warden of the Stannaries.  
Stannaries of Cornwall.

**IN the MATTER of the COMPANIES ACT, 1862, and of the WHEAL HARTLEY MINING COMPANY.—ALL CREDITORS or CLAIMANTS of the ABOVE COMPANY who have not received notice from the Registrar of the said Court that their claims have been already admitted, are hereby REQUIRED TO COME IN AND PROVE THEIR SEVERAL DEBTS OR CLAIMS at the Registrar's Office, Truro, on Tuesday, the 31st day of March instant, at Eleven o'clock in the forenoon, or in default thereof they will be EXCLUDED from the BENEFIT of ANY DISTRIBUTION made before such proof. And for the purpose of such proof they are either to attend in person or by their solicitors or competent agents, or (unless such attendance be required by the Registrar's summons) they are to send affidavits of their several debts or claims to the Registrar of the Court at Truro, such affidavits being sworn either before some Commissioner of the said Court or before any Court, Judge, Justice or any Commissioner of one of the Superior Courts lawfully authorised to take and receive affidavits and affirmations.**

WM. MICHELL, Registrar of the above-named Court, Truro, Cornwall.  
Dated Registrar's Office, Truro, March, 1868.

In the Court of the Vice-Warden of the Stannaries.  
Stannaries of Cornwall.

**IN RE NORTH ROSKEAR MINE.**  
v. Harthill and Others, dated the 24th day of December, 1868, at the Registrar's Office, at Truro, on Wednesday, the 25th day of March instant, at Twelve o'clock at noon precisely.

1 (698th) PART OR SHARE of the defendant, John Harthill; and  
1 (698th) PART OR SHARE of the defendant, Thomas Wilson,  
Of and in the said MINE.

HODGE, HOCKIN, AND MARRACK, Truro  
(Agents for Rodd and Cornish, Plaintiff's Solicitors, Penzance)

Dated Registrar's Office, March 18, 1868.

QUELLYN SLATE QUARRY, NORTH WALES.

**TO BE SOLD, BY PRIVATE CONTRACT, the LEASE of the QUELLYN QUARRY.** It is situated about eight miles from CAR-NARVON, on the road to BEDDGELERT.

The works have been in operation about four years, during which time a great amount of preparatory work has been done, and, so far as the quarry has been opened, it promises to be a first-class investment. The slate is of good quality, of a beautiful blue colour, without any spots or stripes, and the cleavage is excellent. There is a never-failing supply of water, which may be made available for working the quarry on the lower levels. There is also good tipping ground for the rubbish. During the last six months, although only a limited number of men have been employed, nearly 100,000 slates have been made, specimens of which may be seen at Carnarvon.

The lease is dated July 9, 1864, and is for a term of 30 years, with power of renewal for 30 years, on payment of one year's royalty for such renewal. The dead rent is £10 per annum, and the royalty 2s. per ton on all marketable slates. The working plant may be taken at a valuation.

For further particulars, apply to Messrs. JOHN CLAY and WILLIAM GARTH, 20, Cow-green, Halifax, or to Mr. EDWARD HUMPHREYS, Royal Hotel, Carnarvon, or 33, King-street, Cheapside, London.

MACHINERY AND BRICKMAKING.

**MACHINERY AND PLANT FOR SALE.**—THREE 16-horse power STATIONARY WINDING ENGINES, with drums and gearing complete, Cornish boilers.

ONE 6-horse power PORTABLE ENGINE, with link-reversing motion, and 4 ft. drum, and spur gearing to work same.

ONE 9-horse power WINDING ENGINE, vertical boiler, drum 2 ft. 6 in. diameter, has jib attached, and can be worked as a steam crane. Spare drum, 5 ft. 6 in., long 3 ft. 6 in. diameter.

TWO 18-horse power STATIONARY ENGINES and Cornish boilers. FOUR STEAM CRANES.

SIX 20-horse power PORTABLE ENGINES.

TEN smaller PORTABLE ENGINES, 16 to 6-horse power.

TWELVE MORTAR MILLS.

TEN BRICKMAKING MACHINES.

THREE CLAY-CRUSHING MACHINES.

TWO (6000 gallons) wrought-iron WATER TANKS.

SIX (1200 to 1800 gallons) wood TANKS.

12,000 feet run IRON WHEELING PLATES.

300 off-bearing and crowding BARROWS.

1400 dozen HACK CAPS.

50 tons KILN DOORS and FIRE-BARS.

Price and particulars of—

MR. FIRBANK,  
MIDLAND RAILWAY, HAVERSTOCK HILL, LONDON, N.W.

**FOR SALE, BY PRIVATE CONTRACT, SPARE MACHINERY, &c., viz.:—**

ONE 80 in. cylinder PUMPING ENGINE, with THREE BOILERS and balance-bob., &c., complete.

ONE 72 in. cylinder PUMPING ENGINE (Bull), with TWO BOILERS, &c.

ONE 24 in. cylinder WINDING ENGINE, BOILER, cage, &c.

ONE 26 in. cylinder WINDING ENGINE, TWO BOILERS and steam capstan attached.

ONE 36 in. cylinder STAMPING ENGINE, BOILER, &c., with cast-iron axle for 60 heads, nearly new; 14 ft. calciner, complete.

Between 300 and 400 first-rate PUMPS from 6 to 20 inch, with windbores, matchings, H pieces, &c., &c.; 14 plunger poles from 7 to 20 in., with stuffing boxes and glands to fit.

A quantity of hammered iron rod plates, rod pins, staples and glands, &c.; a quantity of pitch pine and other main rods from 10

**NICHOLLS, MATHEWS, AND CO., ENGINEERS,**  
BEDFORD IRONWORKS, TAVISTOCK.  
MANUFACTURERS OF STEAM ENGINES OF EVERY DESCRIPTION, made on the BEST and NEWEST PRINCIPLES. We beg more especially to call the attention of the public to the MANUFACTURE of our BOILERS, which have been tested by most of our leading engineers. PUMP WORK CASTINGS of EVERY DESCRIPTION, both of brass and iron. HAMMERED IRON and HEAVY SHAFTS of ANY SIZE. CHAINS made of the best iron, and warranted MINERS' TOOLS and RAILWAY WORK of EVERY DESCRIPTION. ALL ORDERS FOR ABROAD RECEIVE their BEST ATTENTION. NICHOLLS, MATHEWS, and Co. have had 20 years' experience in supplying machinery to foreign mines, and selecting experienced workmen to erect the same, where required.

Messrs. NICHOLLS, MATHEWS, and Co. have always a LARGE STOCK of ECONOMY-MINE MATERIALS in stock, and at moderate prices.

**WILLIAMS'S PERRAN FOUNDRY COMPANY,**  
PERRANARWORTHAL, CORNWALL.  
MANUFACTURERS OF STEAM PUMPING AND EVERY OTHER KIND of ENGINES, together with BOILERS, PUMP CASTINGS, and MINING TOOLS of every description, of the very best quality. Estimates given for the supply of any amount of machinery.

London Agent.—Mr. EDWARD COOKE, 75, Old Broad-street, London, E.C.

**RAILWAY CARRIAGE COMPANY (LIMITED)**  
ESTABLISHED 1847.  
OLD BURY WORKS, NEAR BIRMINGHAM.  
MANUFACTURERS OF RAILWAY CARRIAGES AND WAGONS, and EVERY DESCRIPTION OF IRONWORK.

Passenger carriages and wagons built, either for cash or for payment over a period of years.  
RAILWAY WAGONS FOR HIRE.  
CHIEF OFFICES.—OLD BURY WORKS, NEAR BIRMINGHAM.  
LONDON OFFICES.—6, STOREY'S GATE, GREAT GEORGE STREET,  
WESTMINSTER.

**THE BIRMINGHAM WAGON COMPANY (LIMITED)**  
MANUFACTURE RAILWAY WAGONS OF EVERY DESCRIPTION, for HIRE AND SALE, by immediate or deferred payment. They have also wagons for hire capable of carrying 6, 8, and 10 tons, part of which are constructed specially for shipping purposes. Wagons in working order maintained by contract.

EDMUND FOWLER, Secy.

WAGON WORKS.—SMETHWICK, BIRMINGHAM.

\*\* Loans received on Debenture; particulars on application.

London Agent.—Mr. E. B. SAVILE, 67, Victoria-street, Westminster, S.W.

**STAFFORDSHIRE WHEEL AND AXLE COMPANY (LIMITED),**  
MANUFACTURERS OF RAILWAY CARRIAGE, WAGON, and CONTRACTORS' WHEELS and AXLES, and other IRONWORK used in the CONSTRUCTION of RAILWAY ROLLING STOCK.

OFFICES AND WORKS,  
HEATH STREET SOUTH, SPRING HILL, BIRMINGHAM.

LONDON OFFICE.—118, CANNON STREET, E.C.

**J. BAILEY AND CO.'S**  
WINDING  
INDICATORS  
AND  
SIGNAL  
BELLS.  
Illustrated cata-  
logue of useful in-  
ventions, 6 stamps.  
ALBION WORKS, SALFORD, LANCASHIRE.



STEAM ENGINES,  
ENGINEERS' TOOLS, BUILDERS' CONTRACTORS',  
COLLIERY PLANT, AND MACHINERY,  
Of every description, new and secondhand,  
FOR SALE OR HIRE,  
At greatly reduced prices. Best materials, workmanship, and finish, warranted.

**WHEATLEY KIRK,**  
ENGINEERING, MILL VALUER, AUCTIONEER, &c.,  
8, ESSEX STREET, MANCHESTER.

Monthly Circulars forwarded free of charge.

**GALLOWAY BOILER TUBES.**  
NO CORNISH or LANCASHIRE BOILERS should now be MADE without having the FLUES STRENGTHENED by means of these TUBES. They effect a considerable saving in fuel, increase the quantity of steam, and also improve the circulation, thus preventing priming, &c.

W. AND J. GALLOWAY AND SONS, ENGINEERS, MANCHESTER.

**GALLOWAY BOILER TUBES**  
ARE ESPECIALLY ADAPTED for INTRODUCTION into EXISTING BOILERS. Upwards of 40,000 of these TUBES are now working. Full particulars of names of firms who have them at work may be had from the Patentees.

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WILTON'S MATHEMATICAL INSTRUMENT ESTABLISHMENT REMOVED from St. Day to A. JEFFERY'S, CAMBORNE.

W. H. WILTON begs to thank his friends for their very liberal support for so many years, and informs them that he has now declined business in England in favour solely of Mr. A. JEFFERY, MATHEMATICAL INSTRUMENT MAKER, CAMBORNE, whom he considers (having been an assistant to his father for several years) is in every way capable of creditably maintaining the good name universally awarded to Wilton's instruments.

**A. JEFFERY**  
Respectfully begs to inform Mine Managers, Surveyors, Engineers, &c., that having purchased Mr. Wilton's business, and the very valuable acquisitions and appliances belonging thereto, he has enlarged his Mathematical Instrument Manufactory, and is prepared to supply THEODOLITES, DIALS, POCKET DIALS, LEVELS, TRAVERSING and PLAIN PROTRACTORS, CASES OF DRAWING INSTRUMENTS, MEASURING CHAINS AND TAPES, ASSAYERS' SCALES AND WEIGHTS, ENGINE COUNTERS, and, in short, every description of Instruments used in SURVEYING, MEASURING, MAPPING, &c.

Repairing in all its branches promptly attended to.

**JOHN AND EDWIN WRIGHT,**  
PATENTEE.  
(ESTABLISHED 1770.)  
MANUFACTURERS OF EVERY DESCRIPTION OF IMPROVED

**PATENT FLAT AND ROUND WIRE ROPES.**  
From the very best quality of charcoal iron and steel wire.  
**PATENT FLAT AND ROUND HEMP ROPES.**  
SHIPS' RIGGING, SIGNAL AND FENCING STRAND, LIGHTNING CONDUCTORS, STEAM PLOUGH ROPES (made from Webster and Horsfall's patent steel wire), HEMP, FLAX, ENGINE YARN, COTTON WASTE, TARPAULING, OIL SHEETS, BRATTICE CLOTHS, &c.

UNIVERSE WORKS, MILLWALL, POPLAR, LONDON.  
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CITY OFFICE No. 5, LEADENHALL STREET, LONDON, E.C.

**Swan Rope Works.**  
**GARNOCK BIBBY, AND CO.,**  
CHAPEL STREET, LIVERPOOL.  
MANUFACTURERS of FLAT and ROUND HEMP and IRON and STEEL WIRE ROPE for MINING, RAILWAY, and SHIPPING PURPOSES.  
MANILLA ROPE of SUPERIOR QUALITY, FIFTY PER CENT. STRONGER and THIRTY PER CENT. CHEAPER than Russian hemp rope.  
WIRE ROPE of FIRST QUALITY WIRE, and the HIGHEST STANDARD of STRENGTH.

**I**N THE SPRING PARR'S LIFE PILLS are used by thousands. They clear from the system all hurtful impurities, promote appetite, aid digestion, purify the blood, and keep the bowels regular. PARR'S LIFE PILLS may be obtained of any medicine vendor, in boxes 1s. 1½d., 2s. 9d., and in family packets 1s. each. Directions with each box.

## THE MINING JOURNAL.

MARCH 21, 1868.

## HEATON'S PATENT STEEL.

## THE Langley Mill Steel & Ironworks Company (LIMITED), Langley Mill, Near Nottingham,

Are now making this Steel according to Mr. HEATON'S PATENTS, dated 17th March, 1866, and 3d May, 1867, under the direct superintendence of the Patentee.

It has been tested in a great variety of ways, and is found to be at least equal to any that can be met with. It is uniform in quality, and is suitable for any purpose to which high-class steel can be applied.

Samples and prices can be obtained on application to the company; or to any of their recognised agents.

TO MINING COMPANIES, MECHANICAL ENGINEERS, MERCHANTS, SHIPPING AGENTS, &c.

## THE TITANIC STEEL AND IRON COMPANY (LIMITED)

MANUFACTURE A VERY SUPERIOR QUALITY OF STEEL FOR BORERS, ROCK-DRILLING, AND MINING PURPOSES

GENERALLY; ALSO FOR LATHE TOOLS, TAPS, DIES, DRILLS, PUNCHES, CHISELS, SHEAR BLADES, SNAPS, AND BOILER MAKERS' AND SMITHS' TOOLS.

## SOLID CAST-STEEL HAMMERS

CAREFULLY MADE OF BEST CAST-STEEL TO ANY PATTERN.

The Company's STEEL is manufactured according to the processes and under the supervision of

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WORKS.—COLEFORD, FOREST OF DEAN. OFFICES.—No. 15, FOREGATE STREET, WORCESTER.

All communications to be sent to the offices.

## ORMEROD, GRIERSON, & CO., ST. GEORGE'S IRONWORKS, HULME, MANCHESTER,

Have the largest assortment in the Trade of PATTERNS,

## SPUR WHEELS, BEVEL WHEELS, MITRE WHEELS.

ALSO FLY WHEELS, DRIVING PULLEYS, AND DRUMS

CAN BE SUPPLIED BORED AND TURNED, IF REQUIRED.

CATALOGUES ON APPLICATION.

ALSO, MANUFACTURERS OF BLAST ENGINES, COLLIERY AND ALL OTHER DESCRIPTIONS OF STATIONARY ENGINES AND BOILERS, MILL GEARING, &c.

## ARTESIAN BORING.

IMPROVEMENTS IN

## TOOLS FOR BORING FOR WATER, COAL, AND MINERALS.

TILLEY'S PATENT.

These consist in DOING AWAY WITH THE MALE SCREW ON BORING RODS, and, by their patented arrangements, DIMINISHING THE RISK OF BREAKAGE, and RENDERING REPAIRS EASY. For prospectuses, apply to—

**M. BEALE, 21, GRESHAM STREET, E.C.**

Estimates given for obtaining water and boring for minerals.

## SPECIAL NOTICE.

## CLAYTON, SHUTTLEWORTH, AND CO.,

At the Triennial Trials of the ROYAL AGRICULTURAL SOCIETY OF ENGLAND, held at Bury St. Edmunds, July, 1867, received the following AWARDS:—

For Single Cylinder Portable Steam Engine.—THE FIRST PRIZE OF £25.

For Double Cylinder Portable Steam Engine.—THE FIRST PRIZE OF £25.

For Horizontal Cylinder Fixed Engine.—THE FIRST PRIZE OF £20.

For Double Blast Finishing Thrashing Machine.—THE PRIZE OF £15.

Also, THE SOCIETY'S SILVER MEDAL for Adjusting Blocks for Machines;

PARIS EXHIBITION, 1867, GOLD MEDAL.

The duty performed by all CLAYTON, SHUTTLEWORTH, and Co.'s Engines on this occasion considerably exceeded that of any others, and has never been equalled at ANY of the trials of the Society. CLAYTON, SHUTTLEWORTH, and Co. refer with pleasure to the fact that the duty of their "Commercial" or single valve engine at Chester, so long ago as 1858, was not equalled by any "ordinary" Engine at Bury.

CLAYTON, SHUTTLEWORTH, & CO., LINCOLN; and 78, LOMBARD STREET, LONDON.

## PATENT FLEXIBLE TUBING, AND BRATTICE CLOTH FOR MINES

MANUFACTURED BY

## ELLIS LEVER,

WEST GORTON WORKS, MANCHESTER.

PARIS EXHIBITION, Silver Medal for STEAM CRANES.

1867—AWARDS, Bronze Medal for DONKEY FEED PUMPS.

APPLEBY BROTHERS,

EMERSON STREET, SOUTHWARK,

LONDON, S.E.,

Engineers and Patentees of STEAM CRANES, DONKEY PUMPS, &c.

## PATENT DONKEY PUMPS.

Nos. 1 2 3 4 5 6 7 8 9  
Diam. of ram .. 1½ in. .. 2 in. .. 2½ in. .. 3 in. .. 3½ in. .. 4 in.

\*Gall. per hour .. 230 .. 400 .. 850 .. 1200 .. 1600 .. 2100 .. 2600 .. 3800

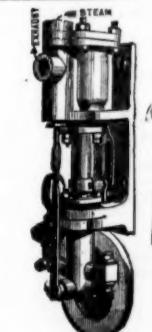
Approx. H.P. .... 15 .. 25 .. 40 .. 50 .. 80 .. 95 .. 130 .. 150 .. 230

Single-acting price £10 5s. £12 10s. £15 18s. £24 12s. £38 10s. £50 10s.

Double-acting do. 11 10s. 14 0s. 17 10s. 20 10s. 24 10s. 32 10s. 43 10s. 50 10s.

Double-acting pump on base plate .. 27 10s. 32 10s. 38 10s. 43 10s. 50 10s.

\* Calculated at 200 strokes per minute.



## IMMENSE SAVING OF LABOUR.

TO MINERS, IRONMASTERS, MANUFACTURING CHEMISTS, RAILWAY COMPANIES, EMERY AND FLINT GRINDERS, MACADAM ROAD MAKERS, &c., &c.

BLAKE'S PATENT STONE BREAKER,  
OR ORE CRUSHING MACHINE.

FOR REDUCING TO SMALL FRAGMENTS ROCKS, ORES, AND MINERALS OF EVERY KIND.

It is rapidly making its way to all parts of the globe, being now in profitable use in California, Washoe, Lake Superior, Australia, Cuba, Chili, Brazil, and throughout the United States and England. Read extracts of testimonials:—

*The Parys Mines Company, Parys Mine, near Bangor, June 6.—We have had one of your stone breakers in use during the last twelve months, and Captain Moreton reports most favourably as to its capabilities of crushing the materials to the required size, and its great economy in doing away with manual labour.* JAMES WILLIAMS.

H. R. Marsden, Esq.

*Ecton Emery Works, Manchester.—We have used Blake's patent stone breaker made by you, for the last 12 months, crushing emery, &c., and it has given every satisfaction. Some time after starting the machine a piece of the movable jaw's about 20 lbs. weight, chilled cast-iron, broke off, and was crushed in the jaws of the machine to the size fixed for crushing the emery.* THOS. GOLDSWORTHY & SONS.

*Alkali Works, near Wednesbury.—I at first thought the outlay too much for so simple an article, but now think it money well spent.* WILLIAM HUNT.

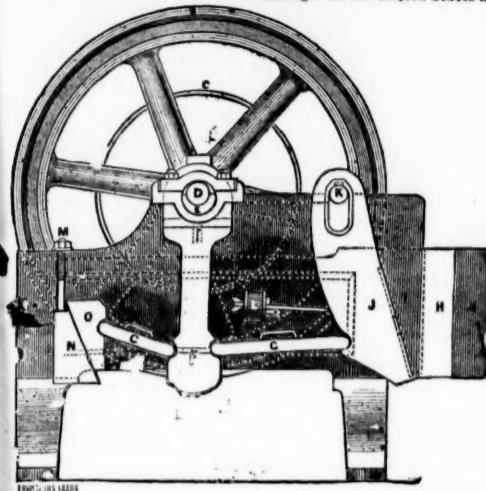
*Welsh Gold Mining Company, Dolgelly.—The stone breaker does its work admirably, crushing the hardest stones and quartz.* WM. DANIEL.

*Our 15 by 7 in. machine has broken 4 tons of hard whinstone in 20 minutes, for fine road metal, free from dust.* MESSRS. ORD AND MADDISON, STONE AND LIME MERCHANTS, DARLINGTON.

*Kirkless Hall, near Wigan.—Each of my machines breaks from 100 to 120 tons of limestone or ore per day (10 hours), at a saving of 4d. per ton.* JOHN LANCASTER.

*Ovoca, Ireland.—My crusher does its work most satisfactorily. It will break 10 tons of the hardest copper ore stone per hour.* WM. G. ROBERTS.

*General Fremont's Mines, California.—The 15 by 7 in. machine effects a saving of the labour of about 30 men, or \$75 per day. The high estimation in which we hold your invention is shown by the fact that Mr. Park has just ordered a third machine for this estate.* SILAS WILLIAMS.



For circulars and testimonials, apply to—

H. R. MARSDEN, SOHO FOUNDRY,

MEADOW LANE, LEEDS,  
ONLY MAKER IN THE UNITED KINGDOM.

CAUTION!  
BLAKE'S PATENT STONE BREAKER,  
In Chancery.

BLAKE v. ARCHER, NOVEMBER 12, 1867.

His Honour the Vice-Chancellor WOOD having found a VERDICT in FAVOUR of the PLAINTIFFS in the above Cause, establishing the VALIDITY of BLAKE'S PATENT, and made a DECREE for an INJUNCTION to RESTRAIN the DEFENDANTS, MESSRS. THOMAS ARCHER and SON, of Dunston Engine-Works, near Gateshead-on-Tyne, from INFRINGING such PATENT, and ordering them to pay to the Plaintiffs the costs of the Suit.

ALL PERSONS are hereby CAUTIONED against MANUFACTURING, SELLING, or USING any STONE BREAKERS similar to BLAKE'S, which have not been manufactured by the Plaintiffs. Application will forthwith be made to the Court of Chancery for INJUNCTIONS AGAINST ALL PERSONS who may be found INFRINGING BLAKE'S PATENT after this notice.

SOLE MAKER IN ENGLAND,

H. R. MARSDEN, SOHO FOUNDRY, MEADOW LANE, LEEDS.

PARIS EXHIBITION, 1867. SILVER MEDALS, CLASSES 40-51.

AWARDED THE ONLY FIRST-CLASS MEDAL FOR CRUCIBLES.

THE

PATENT PLUMBAGO CRUCIBLE COMPANY,  
SOLE MANUFACTURERS UNDER MORGAN'S PATENT,  
BATTERSEA WORKS, LONDON, S.W.

These Crucibles (MORGAN'S PATENT) were the only ones to which Prize Medals were awarded in London, 1862; Dublin, 1865; New Zealand, 1865; and Oporto, 1865.

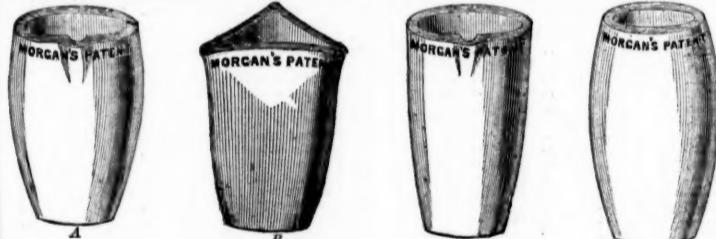
They have been in use for many years in the English, Colonial, French, and other Foreign Mints; the English, French, and other arsenals; and have been adopted by most of the large Engineers, Founders, and Refiners at Home and Abroad.

The capabilities which have now for more than twelve years distinguished these Crucibles are:—

Their quality is uniform. They withstand the greatest heat without danger. Their average durability for Gold, Silver, Copper, and other ordinary metals is forty to fifty pourings, in some cases reaching one hundred. They never crack, and heat more rapidly than any other kind. One annealing only is required. Change of temperature has no effect. They can when hot from the furnace be dipped in cold water with safety. The saving of labour and metal is very great. (Messrs. BREEDEN and BOOTH, Birmingham, testify to the saving of 1 ton 2 qrs. 21 lbs. per oz. of metal in melting 73 tons 6 cwt. of brass.) In Steel Melting the saving of fuel has been demonstrated to amount to a ton and a half to every ton of steel fused. For Zinc they last longer than iron pots, and save the great loss which arises from mixture with iron. Those for Malleable Cast-iron show an average working of seven days, doing each lay nearly double the work of any other crucible.

As these crucibles last much longer than any others, it follows that the saving of metal must be great, because to each worn crucible a quantity of metal adheres.

In fact, comparing these with other crucibles, the saving of metal and fuel alone is more than equivalent to their cost.



are made in sizes varying from 2 ozs. to any required capacity, and are marked by the quantity of kilograms they will contain; thus No. 100 will contain

kilograms.

In shape, but correspond in all other respects with A, and are similarly marked.

are marked in English pounds—thus, a crucible marked 60 will contain 60 lbs.

are made expressly for steel in various sizes.

## MORGAN'S PATENT CRUCIBLES

Can be made any shape or size required, and are stamped as below:—



we call particular attention

to our Trade Mark, as here

shown.

"It follows, with the persistence of a law, that originators should be beset by imitators, just as in the natural world the finest organic forms are most liable to parasitic growth."—Miss METEYARD's Life of Josiah Wedgwood, the Potter.

In all instances please specify "MORGAN'S PATENT," and address to—

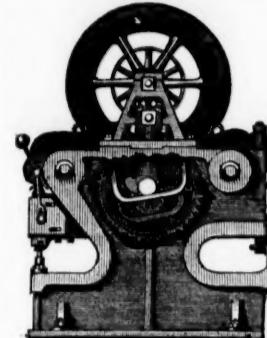
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## BICKFORD'S PATENT SAFETY FUSE

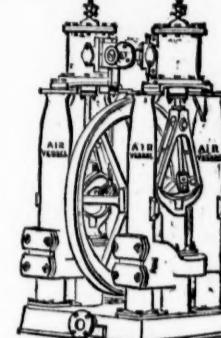
Obtained the PRIZE MEDALS at the "ROYAL EXHIBITION" of 1851; at the "INTERNATIONAL EXHIBITION" of 1862, in London; at the "IMPERIAL EXPOSITION" held in Paris, 1855; at the "INTERNATIONAL EXHIBITION," in Dublin, 1865; and at the "UNIVERSAL EXHIBITION," in Paris, 1867.

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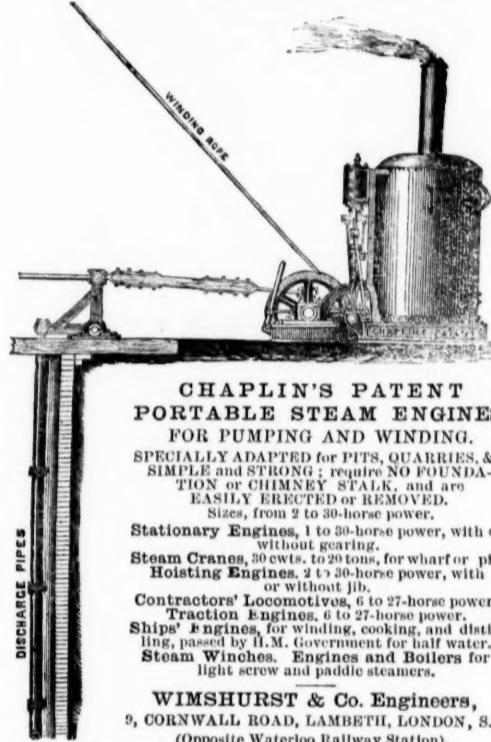
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Sizes, from 2 to 30-horse power.

Stationary Engines, 1 to 30-horse power, with or  
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REFERENCE TO THE LEADING PHYSICIANS OF THE DAY.

144

145

146

147

**Contract for Coals for San Paulo de Loando.**  
**CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.**  
  
**THE COMMISSIONERS for Executing the**  
 Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that on TUESDAY, the 7th April next, at Two o'clock, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING and DELIVERING into store at San Paulo de Loando,

**ONE THOUSAND TONS OF SMOKELESS SOUTH WALES COALS,**  
 Fit for the service of Her Majesty's steamships and vessels. One-half of the coals to be shipped within one month, and the remainder within two months, from the 7th April, 1868.

A form of the tender and conditions of contract may be seen in the lobby of the Storekeeper-General's Department, Admiralty, Somerset House. No tender will be received after Two o'clock on the day of treaty, nor will any be noticed unless the party attends, or an agent for him duly authorised in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left-hand corner the words "Tender for Coals for San Paulo de Loando," and must also be delivered at the Department of the Storekeeper-General, Admiralty, Somerset House, accompanied by a letter signed by two responsible persons, engaging to become bound with the person tendering in the sum of 250 per cent. on the value for the due performance of the contract.

By order, ANTONIO BRADY,  
 Registrar of Contracts and Public Securities

Contract Department, Admiralty, Somerset House, March 20, 1868.

**Contracts for Materials for Seamen's Clothing.**

**CONTRACT DEPARTMENT, ADMIRALTY, SOMERSET HOUSE.**

  
**THE COMMISSIONERS for Executing the**  
 Office of Lord High Admiral of the United Kingdom of Great Britain and Ireland, do hereby give notice that, on MONDAY, the 6th of April next, at Twelve o'clock at noon, they will be READY to TREAT with such persons as may be WILLING to CONTRACT for SUPPLYING and DELIVERING into Her Majesty's Victualling Stores at Deptford, the

**UNDERMENTIONED ARTICLES, viz.:-**

	Quantities.
42 inches wide.....	2,000 yards.
Hessen { 36 ditto.....	15,000 "
36 ditto.....	3,000 "
30 ditto.....	15,000 "
27 ditto.....	3,000 "
Black Verona serge.....	4,000 "
Royal canvas.....	4,000 "
Padding cloth.....	900 "
White calico.....	7,000 "
Stay tape.....	48,000 "
White tape, half inch.....	400,000 "
Osnaburgh.....	5,000 "
Black Linen.....	2,500 "
Black silk twist.....	60,000 "
Blue worsted tape.....	150,000 "
White Dutch tape.....	100,000 pieces.
Raven sewing silk.....	60,000 skeins.
White thread.....	1,800 lbs.
Whited brown thread.....	3,000 "
Blue worsted.....	5,000 "
Sewing cotton.....	300 "
Buttons, stained bone.....	6,000 gross.
Ditto, white metal, large.....	13,000 "
Ditto, crown and anchor, middling.....	500 "
Ditto, ditto, small.....	250 "

To be delivered within four calendar months from the date of the acceptance of the tender.

Their lordships reserve to themselves the power, when the tenders are opened, of contracting either for the whole or for such part thereof only as they may deem fit, or for a greater quantity, or of not contracting for any; and also an unlimited power of selection in accepting the tenders.

No tender will be received unless made on the printed form provided for the purpose, which may be obtained on application in the lobby of the Department of the Controller of Victualling, Admiralty, Somerset-house, and at the Victualling-yards at Gosport and Plymouth.

Tenders will be admitted for any portion of the above quantities.

Separate tenders must be made for each article, as none will be entertained unless so made.

Samples of the articles may be seen in the lobby above mentioned between the hours of 10 and 2 only, and also at the Victualling-yard at Gosport and Plymouth.

Particular attention is called to the revised conditions of the contract (especially as regards penalties for non-delivery in time), which may also be seen in the said lobby, as well as at the Victualling-yards at Gosport and Plymouth.

No tender will be received after 12 o'clock at noon on the day of treaty; and it will not be required that the party tendering, or an agent on his behalf, should attend at the office on the day of contract, as the result of the offer received from each person will be communicated to him and his proposed sureties in writing.

Every tender must be addressed to the Secretary of the Admiralty, and bear in the left hand corner the words "Tender for—," and must also be delivered at the Department of the Controller of Victualling, Admiralty, Somerset-house.

The contractors will have to pay one-half the amount of the stamps on their contracts and bonds.

By order, ANTONIO BRADY,  
 Registrar of Contracts and Public Securities.

Contract Department, Admiralty, Somerset House, March 16, 1868.

**Contract for Welsh Pig Iron.**

**BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL.**

  
**NOTICE IS HEREBY GIVEN that the**  
 DIRECTOR-GENERAL OF STORES FOR  
 INDIA will be READY, on or before Monday, the  
 23d instant, to RECEIVE PROPOSALS in writing,  
 sealed up, from such persons as may be willing to SUPPLY—

**FOUR HUNDRED TONS OF WELSH PIG IRON.**

And that the conditions of the said contract may be had on application, addressed to the Director-General of Stores, India Office, Westminster, S.W., where the proposals are to be left any time before Two o'clock P.M. of the said 23d day of March, 1868, after which hour no tender will be received.

India Office, March 12, 1868. GERALD C. TALBOT, Director-General.

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## THE MINING JOURNAL, RAILWAY AND COMMERCIAL GAZETTE. [MARCH 21, 1868.]

### THE MINING SHARE LIST.

#### BRITISH DIVIDEND MINES.

Shares.	Mines.	Paid.	Last Pr.	Business.	Total divs.	Per share.	Last paid.
1500 Alderley Edge, c, Cheshire* .....	10 0 0 ..	..	..	9 7 8 ..	0 5 0 ..	Jan. 1868	
2000 Bottaallack, t, c, St. Just .....	91 5 0 ..	..	..	488 15 0 ..	5 0 0 ..	May 1868	
4000 Brookwood, c, Buckfastleigh .....	11 0 0 ..	..	..	0 7 6 ..	0 2 8 ..	Dec. 1867	
1000 Bronfloyd, t, Cardigan* .....	12 0 0 ..	..	..	0 9 3 ..	0 6 0 ..	Jan. 1868	
6400 Cashwell, t, Cumberland* .....	2 10 0 ..	..	..	0 1 6 ..	0 1 6 ..	Aug. 1868	
916 Cargoll, s-t, Newlyn .....	15 5 7 ..	22	..	14 5 0 ..	0 10 0 ..	Jan. 1868	
509 Cenbrbrace and Penkeville, t .....	..	..	..	1 0 0 ..	0 1 0 ..	Oct. 1867	
867 Cwm Erylin, t, Cardiganshire* .....	7 10 0 ..	..	..	25 18 0 ..	1 0 0 ..	Jan. 1868	
128 Cymwyst, t, Cardiganshire .....	60 0 0 ..	..	..	381 10 0 ..	2 0 0 ..	Dec. 1867	
280 Derwent Mines, s-t, Durham .....	300 0 0 ..	..	..	174 10 0 ..	5 0 0 ..	June 1867	
124 Devon Gt. Consols, c, Tavistock* .....	1 0 0 ..	..	..	440 450 ..	10 88 ..	7 0 0 ..	Jan. 1868
656 Ding Dong, t, Galval .....	49 14 6 ..	..	..	0 8 0 ..	0 10 0 ..	Sept. 1867	
5000 Dolcoath, c, t, Camborne .....	128 17 6 ..	..	..	840 10 0 ..	3 0 0 ..	Feb. 1868	
6144 East Caradon, c, St. Cleer .....	2 14 6 ..	4 5 1/4	4 4 1/4	14 11 6 ..	2 0 0 ..	July 1867	
300 East Darren, t, Cardiganshire .....	32 0 0 ..	..	..	150 10 0 ..	2 0 0 ..	Dec. 1867	
128 East Pool, t, c, Pool, Illogan .....	24 5 0 ..	..	..	427 10 0 ..	5 0 0 ..	Mar. 1868	
1906 East Wheal Lovell, t, Wendron .....	3 9 0 ..	9	8 1/2 9	3 11 6 ..	0 10 0 ..	Dec. 1867	
2000 Foxdale, t, Isle of Man* .....	25 0 0 ..	..	..	71 0 0 ..	0 10 0 ..	Sept. 1867	
5000 Frank Mills, t, Christow .....	3 18 6 ..	..	..	3 5 6 ..	0 5 0 ..	Feb. 1868	
3500 Gawton, c, Tavistock .....	3 10 6 ..	..	..	0 8 0 ..	0 3 0 ..	Jan. 1868	
15000 Great Laxey, t, Isle of Man* .....	4 0 0 ..	18	17 18	8 5 0 ..	0 10 0 ..	Mar. 1868	
508 Great Wheal Vor, t, c, Helston .....	49 0 0 ..	..	18 1/2 19 1/2	12 15 6 ..	0 7 6 ..	June 1868	
1024 Herdfoot, t, near Liskeard .....	8 10 0 ..	39	35 40	45 0 ..	1 10 0 ..	Feb. 1868	
6000 Hindston Down, c, Calstock* .....	5 10 6 ..	..	..	0 10 0 ..	0 5 0 ..	April 1868	
4000 Illesbury, t, Cardiganshire .....	18 15 0 ..	..	..	498 10 0 ..	3 0 0 ..	Dec. 1867	
3000 Mae-s-Ynafn, t, Flint* .....	20 0 0 ..	29	27 28	3 0 0 ..	1 0 0 ..	Dec. 1867	
9000 Marke Valley, c, Caradon .....	4 10 6 ..	6 1/2	4 1/2	4 4 6 ..	0 3 0 ..	Jan. 1868	
3000 Minera Boundary, t, Wrexham* .....	1 0 0 ..	..	..	0 12 0 ..	0 3 0 ..	Mar. 1868	
18000 Minera Mining Co., t, Wrexham* .....	25 0 0 ..	195	170 180				